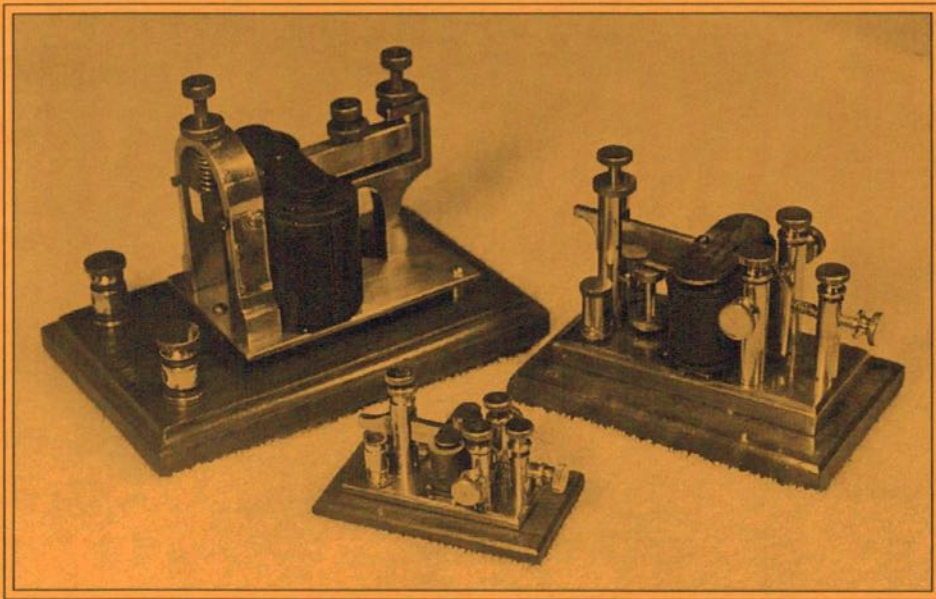


Flying
the flag
for
Morse

Number 43 – Christmas 1995

Morsum Magnificat

The Morse Magazine



A Family of Telegraph Sounders



Flying
the flag
for
Morse

Morsum Magnificat

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MORSUM MAGNIFICAT was first published as a quarterly magazine in Holland, in 1983, by the late Rinus Hellemons PA0BFN. Now published six times a year in Britain, it aims to provide international coverage of all aspects of Morse telegraphy, past present and future. MORSUM MAGNIFICAT is for all Morse enthusiasts, amateur or professional, active or retired. It brings together material which would otherwise be lost to posterity, providing an invaluable source of interest, reference and record relating to the traditions and practice of Morse.

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CONSULTANT EDITOR Tony Smith G4FAI

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ON OUR FRONT COVER

The largest sounder in this group is a Western Electric aluminium armature model rescued from the scrap heap and restored by Robert Butt, N1KPR. The Momma and Baby sounders are Bob's own creations, made from scrap brass. The pole pieces are steel, the bases mahogany. Coils are 'transplanted' from a small relay and door buzzer. Photo: N1KPR

Comment

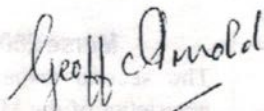
IT IS REASSURING to see that some sense of sanity has at last found its way back into the furore surrounding the recent drive in some quarters to do away with the Morse requirement for an amateur HF licence (see page 10). It is a sad day when governments would pursue or support such a change without consultation with their national societies, or even in defiance of the expressed views of those societies and their memberships.

No doubt the governments would justify their action under the seductive banner of 'de-regulation'. However, it sometimes seems to me that 'de-regulation' is simply a move on their part to shuffle off responsibility for the efficient running of a particular public service onto some commission or regulator. Then, when things go wrong and the public complain about the all-too-frequent decline in that service, government departments can simply hold up their hands and exclaim "Nothing to do with us! You must complain to the commissioner/regulator/service provider/etc. (*delete as appropriate!*)".

As RSGB President Clive Trotman says in his open letter (see page 11), we cannot be complacent about the amount of work which will be required to devise an acceptable system to replace the present form of Morse requirement. I am under no illusion that the requirement will eventually be changed in some way, for as I have observed before, the Amateur Service has undergone a continuous process of evolutionary change ever since it began.

It was only just under 50 years ago, when amateur radio operating began again after WWII, that the UK authorities removed the requirement that all applicants must declare a particular line of research they intended to pursue, before a licence would be granted. At that time, the bands available were just five in number, at 160, 40, 20, 10 and 5 metres, and during your first year you were permitted to use CW only, with a maximum power of 25 watts! I think there was also still an official requirement to have a valid calibration certificate for any quartz crystal used in your transmitter!

So, things have changed – out of all recognition, you might say – and will without question continue to do so. What we happy band of Morse enthusiasts must endeavour to do is to ensure that we make good use of our allotted segments of the bands, and to lose no opportunity to interest and enthuse new recruits to the amateur radio hobby in the joys of the mode.



G3GSR

MM43 – Christmas 1995

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News

Amateur Morse Test – No Change

After discussing New Zealand's proposal that the amateur Morse test requirement be deleted from the Radio Regulations, the World Radio Conference has decided to refer the matter for consideration at a future conference. See page 10 for a full report.

Morsecodians Newsletter

The ACT branch of the Morsecodians Fraternity has produced an occasional newsletter called *The Canberra Telegraph*. Edited by Allan Moore VK1AL, the first issue describes past and present activities of the Morsecodians, including 'dial-up Morse' via the public telephone system.

Using this system, they have extended their 'landline' contacts overseas to Morse Telegraph Club members in several American States, including Alaska. Although MTC members normally use American Morse they are more than happy to change to International code for their sounder contacts with the Australians.

The newsletter reports on the activities of a group of Sydney Morsecodians who work on Wednesdays at the old Ashfield NSW Post Office restoring early, operational, telegraph and telephone equipment.

Mention is also made of the Ferry-mead Post and Telegraph Historical

Society Post Office near Christchurch in New Zealand. This is an official working post office which has displays of old telegraph and telephone equipment and is essentially a 'hands-on' exhibition.

The Canberra Telegraph also reports that discussions have taken place on the possibility of a celebration in 1997 of the 140th anniversary of the inter-capital Morse circuit between Melbourne and Sydney. The proposal is to have operational equipment displayed and working at each terminal to demonstrate to the public how telegraph messages were handled in the old days.

The newsletter comments that even though Morse telegraphy has not been in use in the Australian Postal/Telegraph system for more than 30 years, there is still great public interest in the system and its history.

If former telegraphists had witnessed the numbers of visitors at Alice Springs, Canberra and Eden this year (*see report in MM41, p.3*) sending free telegrams, and openly wondering how the clatter of sounders was transcribed into legible messages, past-telegraphists, says the newsletter, would have felt proud of their former vocation.

Morse 2000 Progress

The second issue of *MORSEs*, the newsletter of the Morse 2000 Outreach, was published recently. The Outreach

promotes Morse code uses in rehabilitation and education. It is a collaborative effort of the University of Wisconsin-Eau Claire School of Nursing/Human Sciences and Services Outreach, Trace Research and Development Center at UW-Madison, and the Johns Hopkins University Center for Technology in Education.

The goals of Morse 2000 Outreach have been updated as follows:

'This outreach will:

1. Organize and conduct an international conference addressing rehabilitation applications of Morse code.

Phase I: Regional planning conference, Spring 1996

Phase II: International conference, Spring 1997... and beyond

Site: University of Wisconsin-Eau Claire, Eau Claire, Wisconsin, USA

2. Develop and maintain a worldwide communication network to share information on Morse code use in rehabilitation and special education.

This network will include the newsletter *MORSEIs* and the on-line Morse 2000 listserver, as well as telephone, FAX, and postal communications.

3. Develop and maintain an international repository for and database of research in Morse code applications in rehabilitation, available via the above communication network.

4. Apply research and clinical findings to establish and promote use of standardized Morse-type entry patterns for all currently-used keyboard functions and mouse emulation.

5. Promulgate a standardized methodology of Morse pattern creation for representing new keyboard functions as they are developed by manufacturers.

6. Continue to influence the computer industry to include Morse code access as a standard, transparent access alternative built in to all new computers.

7. Expand global Morse literacy and awareness for potential users and the general public.

8. Continue to research and develop enhanced, efficient methods of learning Morse code for various expressive and receptive communication applications.

9. Explore possibility of publishing a regular scholarly journal focusing on Morse code research.'

This issue of *MORSEIs* reports on the use of Morse code by children with cerebral palsy; Morse as an adapted computer input writing tool for school students with writing problems; and the use of Morse with severely disabled children at Seattle Children's Hospital. There is also a report on 'Darci cards', a new kind of computer access device with Morse code capability. These are PCMCIA cards which access a computer at its lowest levels. A PCMCIA based access device can supply capabilities which are not possible with a keyboard emulator.

MORSEIs is available free of charge to anyone who is interested in this field of Morse application. To be placed on the mailing list, write to Dr. Thomas W. King, Department of Communication Disorders, University of Wisconsin-Eau

Claire, Eau Claire, WI 54702-4004, USA. (E-mail: KINGTW@UWEC.EDU). Details of how to subscribe at no charge to the Morse 2000 List Server are given in *MORSEs*. This information can also be found on page 5 of MM40.

Help Wanted

Dennis Goacher G3LLZ asks if anyone owning a Walters adjustable fulcrum key would be willing to let him to examine it. He plans to make a replica of this key, but needs to obtain details of the assembly at the front end of the key before he can do this. He would be prepared to travel a reasonable distance for this purpose. If anyone can help, please contact Dennis at: 27 Glevum Road, Swindon, Wilts SN3 4AA.

Lynn Burlingame N7CFO is looking for information on Bunnell Gold Bugs, specifically serial numbers and whether or not they have the adjustable paddle knob. Owners of Gold Bugs are asked to send full information on their keys to Lynn at: 15621 SE 26th Street, Bellevue, WA 98008, USA. (E-mail: keys@scn.org)

Rail Tales

Ruth Eckes, a member of the Seattle chapter of the Morse Telegraph Club, has collected and edited a book of stories from railroads across the US and Canada. It is illustrated with 70 photographs, and contains quite a lot of information about the life and times of railroad telegraphers. It is available for \$14.95 plus \$2.00 shipping and handling for US residents (Washington state residents add 8.2% sales tax). Overseas

surface mail is \$2.50, airmail \$9.00. Copies can be obtained from Ruth at: 35603 Military Road South, Auburn, WA 98001, USA.

(Information from Lynn Burlingame N7CFO)

Canadian Insulator Collector Magazine

When the first Morse line was completed in 1844, it used glass insulators wrapped in cloth with gum and shellac. These were devised by Ezra Cornell, who later founded Cornell University. Within a few years, thousands of miles of bare wire telegraph line had been constructed across the United States and Canada. With this expansion came an immediate demand for insulators, and many glass companies shifted production from bottles to insulators and battery containers.

Demand continued to grow and by 1920, an estimated 8000 different glass and porcelain insulators were being produced. Following the demise of the telegraph, bare wire telephone lines were maintained and upgraded over the years, but as a result of changes in communications technology traditional insulators have now almost disappeared from the Canadian landscape.

A bi-monthly magazine, the *Canadian Insulator Collector* promotes the concept of 'Insulators as Historical Artifacts', and seeks to popularise insulator collecting by providing information in related interests. Insulators, it says, 'represent an important era in the development of a technology we now take for granted. The variety of shapes and colours, and their historical signifi-

cance, have made old insulators desired as collectors' items', and 'Insulator collecting is now a hobby enjoyed by thousands of people who appreciate the history, beauty and diversity of these artifacts.'

The magazine is available by post from Mark Lauckner, Mayne Island, BC, V0N-2J0, Canada, price \$16.00 (Can) or \$18.00 (US). A sample copy, price \$3.00 post-paid, or further information, can be obtained from the same address.

A new book by Mark Lauckner, *Canadian Railway Communications Insulators 1880-1920*, is an updatable reference work identifying 232 glass and 43 porcelain Canadian railway 'Beehive' insulators. This includes 269 black and white photographs, numerous colour photographs and over 300 drawings. Different versions are available, from personal to library copies, ranging in price from \$32 to \$135, plus an update subscription service. Full particulars are available from the same address.

If any reader is an insulator collector, Canadian or otherwise, and would like to write an article for *MM* about the appeal of this telegraph-related hobby, please contact the editor.

G-QRP Winter Sports

The G-QRP Club's Winter Sports will be held from 26 December 1995 to 1 January 1996. Look out for maximum activity on all QRP frequencies, especially on the CW bands, and enjoy the possibility of some surprising DX using less than five watts of power.

AGCW-DL Activities 1996

All radio amateur are invited to take

part in the following CW activities organised by AGCW-DL.

Happy New Year Contest

January 1, 0900-1200 UTC;
3.510-3.560, 7.010-7.040, 14.010-14.060MHz. Further information from Contest Manager, Antonius Recker DL1YEX, Hegerskamp 33, D-48155 Münster, Germany.

QRP Winter Contest

January 6, 1500 UTC, to January 7, 1500 UTC; 3.5, 7, 14, 21, 28MHz. Further info from Contest Manager, Dr Hartmut Weber DJ7ST, Schlesierweg 13, D-38228, Salzgitter, Germany.

Straight Key Party

February 3, 1600-1900 UTC;
3.510-3.560MHz. Further information from Contest Manager, Friedrich Wilhelm Fabri DF1OY, Grünwalder Str.104, D-81547 München, Germany.

Semi-Automatic Key Evening

February 21, 1900-2030 UTC;
3.540-3.560MHz. Further information from Contest Manager, Dietmar Ernst Ulf DK9KR, Elbstr.60, D-28199 Bremen, Germany.

CZEBRIS 1996

The rules for the Czebris 1995 contest are as follows:

Dates and times: February 23, 1600Z, to February 25, 2359Z.

Mode and frequencies: CW only, on 3.560, 7.030, 14.060, 21.060 and 28.060MHz, all ± 10 kHz.

Power: Not exceeding 5W RF output. Stations unable to measure their output, take half DC input power to PA. e.g., 10W DC input = 5W RF output.

Stations eligible: Any licensed radio amateur.

Contest call: CQ QRP. Contest exchange: RST, Power, Name of operator.
Scoring: Stations may be worked once per band; Only QRP/QRP contacts score. Points scored are as follows:

Score by	For QSO with QRP station in			
	UK	OK/OM	EU	Non-EU
UK	2	4	2	3
OK/OM	4	2	2	3
EU	4	4	1	2
Non-EU	4	4	2	1

Multipliers: None.

Final score: The sum of points obtained on each band.

Logs: Separate sheets for each band showing, for each QSO, date, time, call, exchanges (RST/Power/Name) sent and received. Also a summary sheet showing name, QTH and callsign, claimed score for each band and brief details of equipment used. Logs to be sent as follows, to be received by 15 April 1996 – For UK stations, to G.P. Stancey G3MCK, 14 Cherry Orchard, Staines, TW18 2DF.

All other logs, to P. Doudera OK1CZ, U1. baterie 1, 16200 Praha 6, Czech Republic.

Certificates: The leading three stations in each continent will receive a certificate.

Disputes: The decision of the organisers will be final.

(Information from Gerald Stancey G3MCK, Contests and Communications Manager, G-QRP Club)

New Samson Keyers

Two new Samson CMOS iambic memory keyers (pictured on the facing

page) are now available. They are the ETM9C-X3, which is a combined keyer and twin paddle key; and the ETM9COG-X3, which is the same keyer without the built-in paddle.

These keyers have the same circuitry and features as the CMOS Super Keyer 3, described in the August 1995 issue of *QST*. The keyer has six memory buttons that can activate three banks of memories, giving a total of 18 different stored messages of 85 characters each.

There is a total of 1530 characters divided between the 18 memories. If desired, the 1530 characters can be split into 6 memories only, giving 255 characters per memory.

A valuable feature is that the messages and keyer configuration are stored in a 2-Kbyte CMOS EEPROM which consumes no current when idle. All the information stored in the memories is retained when the keyer is switched off, thus extending battery life.

All commands are sent to the keyer in Morse code. A variety of other features include message editing; contest serial numbers: digital and analogue speed control 5 to 60 wpm; an Ultra Speed mode up to 990 wpm; adjustable weight control on code elements; emulation for other keyers; full beacon capability, and more.

The price of the ETM9C-X3 is £159.00, plus £4.00 post and insurance. The ETM9COG-X3 is £118.00, plus £3.40 post and insurance.

Further particulars are obtainable from Frank H. Watts G5BM, Woodland View, Birches Lane, Newent, Glos GL18 1DN. Tel:01531 820960.

(Information from G5BM)



The Samson
ETM9C-X3 keyer
with built-in
paddles



The Samson
ETM9COG-X3
keyer,
which requires
external paddles

QRP on the High Street

Chris Rees, G3TUX, recently announced the opening of retail premises for the QRP Component Company. This shop at 7 Kings Road, Haslemere, Surrey is 50m from the town's railway station, and strategically located between a pub and an Indian restaurant!

As well as the usual fare of kits, keys and QRP, there will be loads of 'JUNK!' (including old books, vintage components and military radios) plus a valve testing service. Shiny new black boxes will **not** be crowding the shelves, but essentials such as coaxial cable, slotted feeder and all types of connector will be offered.

Planned opening hours are 10-12 and 2-4 on Mondays, Tuesdays, Thursdays and Fridays. 10-1 on Saturdays. Closed all day Wednesdays. Other times by arrangement - and please check first (by phoning 01428 641771) if you are travelling from afar.

IKC O/P!

We have heard from Tom French that his popular book *Introduction to Key Collecting* has recently gone out of print (*MM Bookshelf stocks have now all been sold.* - Ed.).

Tom is planning to come out with a new, revised and enlarged edition towards the end of 1996, and has promised to let *MM* know as soon as there is further news.

Write About MM!

If you enjoy *Morsum Magnificat*, and support its efforts to popularise and preserve Morse telegraphy - why not write an article about *MM* for publication in appropriate magazine(s) in your own country?

Tell other Morse enthusiasts about *Morsum Magnificat*, and what it means to you. Tell them how they too can become members of the *MM* global fraternity, keeping in touch with vital Morse news and enjoying the wide range of Morse material from around the world that we carry in every issue!

We already have readers in many countries but would very much like to have more to emphasise the international nature of *MM*, and to provide us with even more sources of information and news about Morse worldwide.

If any readers outside the UK feel they could help in this way, and would like some information about our origins, aims and background to help in preparing a review of *MM*, please contact Tony Smith whose address is shown inside the front cover of each issue of the magazine.

BACK ISSUES

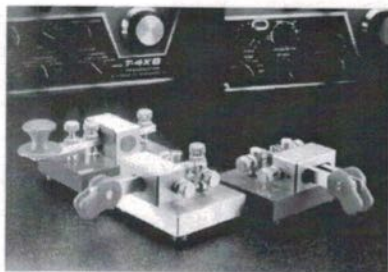
Limited stocks of Issues Nos. **26, 27, and 31 to 42** only now available, price £2.20 each to UK addresses; £2.40 to Europe or £2.75 elsewhere by airmail.

Deduct 20% if ordering 3 or more.

NOTE! We've found **ONE LONELY COPY** of MM21 on the shelf, pining for an appreciative home!

Give us a call if you're interested.

The CW Centre! ©



Jones keys

Peter Jones

Pump Key	Red base	£62.61
	Brass base	£70.76
Single paddle	red	£86.82
	brass	£83.61
Twin paddle	red	£77.19
	brass	£85.22

R A Kent

Pump key	kit	£41.50
	assembled	£53.50
Single paddle	kit	£46.50
	assembled	£56.50
Twin paddle	kit	£53.50
	assembled	£67.50

Morse Tutors

G3TUX "Omega" multimode	£44.95
R A Kent	£49.95

Omega Tutor

Bencher Paddles

Single lever	ST1 Black base	£64.95
	ST2 Chrome base	£79.95
Twin lever	BY1 Black base	£64.95
	BY2 Chrome base	£79.95

DK1WE Miniature Keys

"Minky" pump	£87.95
"Twinky" twin lever paddle	£94.95

Swedish D1000 Pump key £99.95

Keyers

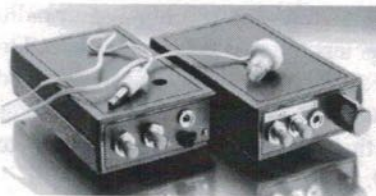
Curtis 8044ABM chip	£19.95
"Oak Hills" Curtis keyer kit	£33.95
assembled pcb	£44.95

R A Kent Electronic keyer
NEW! £45.00

R A Kent Memory Module £25.00

Practice Oscillators

R A Kent (built in speaker)	£17.50
C M Howes ST2 pcb kit	£9.80
HA12R case	£10.10
ST2+HA12R ready to use	£29.95



Prices include 17.5% Value added tax but **not** shipping costs. Export orders welcome.
Used keys and paddles of all makes bought and sold.



G3TUX



The QRP Component Company

7 Kings Road, Haslemere, Surrey GU27 2QA

Tel: 01428 641771 Fax: 01428 661794

THE NEW ZEALAND PROPOSAL to abolish the amateur Morse test was not voted on by the World Radio Conference which ended on November 17. Instead, it was decided to include the following item on the preliminary agenda for WRC-99:

'2.2. consideration of Article S25 concerning the amateur and amateur-satellite services.'

Because of this, the IARU has set an ad-hoc committee to review all of the amateur related international Radio Regulations. At the time of writing, the precise terms of reference of this committee are not known, but its purpose will clearly be to enable proposals from the international amateur community to be presented for consideration by WRC-99. Such proposals, which could affect the future format of amateur radio as it enters the 21st century, will need to be discussed by national societies, and by the three IARU regional conferences over their three year cycle, leading up to 1999.

NZ Backs Off

For the record, during discussion in Working Group 4C of WRC-95, sympathy with the New Zealand proposal was expressed by delegates from the United Kingdom and Turkey, although in both cases they thought it would be better for the matter to be discussed at a future WRC.

Other countries, led by Germany, felt

WRC-95 Report

by Tony Smith

WRC Defers Morse Discussion

that it should be discussed at a future conference. New Zealand then backed off. It recognised that there was strong feeling on the matter in the amateur community, and suggested that the matter be discussed at WRC-99.

From the amateur radio point of view this will be much more satisfactory than the situation at WRC-95. There, the proposal to suppress RR2735 came from one particular administration, against the wishes of its national radio society and disregarding the current policy of the International Amateur Radio Union. Furthermore, the UK had developed a policy favouring the abolition of the Morse test without any consultation with its national society, the Radio Society of Great Britain.

RSGB Open Letter

Arising from the situation in the UK, the RSGB has published an Open

Letter from its President, Clive Trotman GW4YKL, which reads as follows:

'Following the interchange of letters between the Society and the Radiocommunications Agency on the subject of the Morse requirement (*see MM42, p.8. - Ed.*), I was deluged with letters from members and non-members, some 1300 of them. Most of you will appreciate that answering all that correspondence presented me with an impossible task, therefore I am taking the easy way out and am replying by means of this Open Letter.

'Firstly may I thank you all for taking the trouble to write to me, the debate was both interesting and informative, but again the result was still inconclusive, there were some paradoxes among the letters, for example, a good portion of B licensees were for retaining the requirements, whilst there were many A class who advocated its removal. However, the result was still around "fifty-fifty".

'The major reason for the exchange of letters was a simple one really, this major change in direction on licensing should not take place until there had been discussion between the administration and the amateur radio fraternity,

and should not be "rubber stamped" without this consultation. Questions that immediately spring to mind include "what are we going to replace it with?" and "are we going to replace it?", both of which give rise to a whole new set of questions.

'It is acknowledged that because of CEPT T/R 61-01 no administration could act unilaterally. The letters between the Society and the RA had the desired effect, there has been consultation, and administrations have heeded the need for time to consider the effects of such major change on an international scale.

'The decision has been postponed until 1999, now we must work with other societies and administrations to achieve a feasible, and workable system that will be acceptable across the whole amateur radio fraternity. Nobody must be complacent about the amount of work that will be required to achieve this, and just as important, we must not just sit on our hands, we must start to make moves to find a solution immediately, four years is but a short time.

73 de Clive

**Clive N. Trotman, GW4YKL
RSGB President'**

Radio Bygones

*The vintage
wireless
magazine*

including in the current issue ...

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 - Restoring a Crystal Calibrator No. 10
 - Sound reproduction from the 1930s to the CD
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£19.50 to Europe and £23.75 elsewhere by air-
mail, or send £3.25 for a sample copy.*

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Telephone/FAX: 01202 658474**

Why, and What, is '12 wpm'?

by Dr Garry Bold ZL1AN

A NUMBER OF QUERIES recently have been along the lines of 'Why is 12 words per minute the designated Morse test speed? What is so magic about that? And what "words" does this mean?'

Words have different lengths. First, some history. The first ZL (New Zealand) Amateur regulations were gazetted in 1928. The test speeds were 10 wpm (grade I, 50 watts) and 8 wpm (grade II, 5 watts). In 1932, ONE test speed was redefined as 12 wpm, apparently to conform with international agreement.

In 1946, an additional test at 15 wpm was instituted as a requirement for the 'high frequency permit', i.e., for operation on bands above 80 metres. This was abolished in 1969, when all Morse tests reverted to 12 wpm. In 1977, the NZ Novice grade was introduced, with a Morse test at 6 wpm.

Reasonable Lower Limit

Globally, 12 wpm is now the most common standard, used in most European countries, and in South Africa. There are exceptions. There are 3 test speeds, of 5, 13 and 20 wpm in the USA – but their test protocols are quite different, and passing the 20 wpm comprehension-based Extra class test is not much more difficult than our 12 wpm hard copy test.

The Australian test used to be 12 wpm, but has now dropped to 10. The NZ Army and Navy, incidentally, still

test all their Signals personnel at 12 wpm. The arguments justifying these speeds are usually something like: '12 wpm is a reasonable lower limit for practical message passing, and is a speed that almost everybody can send comfortably on a hand key.'

Note the 'almost'. Some people have physical problems that preclude this, and medical evidence is often accepted. 6 wpm is a reasonable lower limit for recognising beacon and repeater callsigns. But what is a WORD?

Standard Word

I wrote at some length about this previously. (See 'Words, Words, Words...', MM33, p.16). Nowhere, as far as I know, is the 'standard word' as recognised in Ham practice actually defined internationally.

It has varied quite a bit. There's evidence that last century a 4-letter word was used, and the space between words, which has to be included in the word-length, has also varied.

Even the word lengths used when Ted McElroy set his extraordinary re-

ceiving records are uncertain – more on that next time. But by unspoken agreement, the standard word is now taken to be PARIS, when sent with standard Morse element durations and including a 7-element (dot-time) word-space.

This corresponds exactly to the algorithm found in some ARRL Handbooks, i.e., 5 dots/second is 12 wpm. This is universally used for calibrating all keyers and software I know, for preparing the NZART Morse tests, and is implemented in my software.

If you count the number of dot-time intervals in PARIS and add a 7-dot word space, you get 50. Thus PARIS is said to be a 50-element word. MORSE is another, and JOY a third – this last the shortest 50-element word in the English language.

Plain Text Shorter

According to Neville ZL2AKV, our General Secretary, a 5-element word-space was used in landline telegraphy in New Zealand. I find Morse sent this way is still quite readable – but the words seem very close together! Some early keyboards and software could send either 5 or 7 element word-spaces. But this is a technical definition. (*The standard word-space for marine operators, as laid down in GPO rules, was also 5 elements up to at least 1950, when I was at radio college, but had changed to 7 elements by 1968. – Ed.*)

In English plain-text, the average word length is LESS than 5, and contains FEWER Morse elements than PARIS. For example, consider this text, which I composed for checking my speed-determining software.

MM43 – Christmas 1995

‘This is a first small text for use in RTEST the receiving test program Here follow seven numbers 1234567 This text was composed with a very simple text editor and lives in the TEXTS directory which is a sub-directory here’.

The odd phraseology is a result of my juggling the text so that if sent in exactly 3 minutes, it has a speed of 11.97 wpm by the PARIS standard. But there are 40 words (not 36), an average of 4.5 letters/word (not 5), and 181 characters (not 180). This whole column averages 4.4 letters/word.

Random Group Practice Discouraged

Generally, English text sent at a given speed will give 10–15 percent MORE real words than it should. But random text, where every character has an equal probability of occurrence, will give FEWER.

This is because the most common letters in ‘real’ English prose, which have the shortest symbols, occur far more frequently than they randomly would – on average, every 5th letter is E. Hence, copying random character groups at 12 wpm is actually easier, for most people, than copying real text!

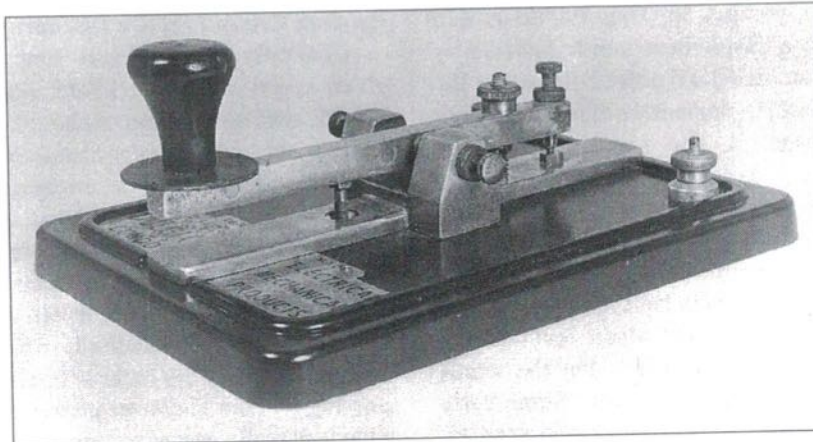
The words, on average, go past more slowly, because they have a much higher proportion of the less common, longer characters. The word ENGINEER takes the same time to send as each of the random groups MJYO and J99! I discourage long-term practice using random groups partly for this reason.

(*Extracted and adapted for Morsum Magnificat from Gary Bold’s ‘The Morseman’ column in Break-in, journal of NZART, May 1994.*)

Info Please!

*Readers require further information on the keys, etc., featured here.
Please write to Tony Smith, 13 Morley Road, Sheringham, Norfolk NR26 8JE
if you can help.*

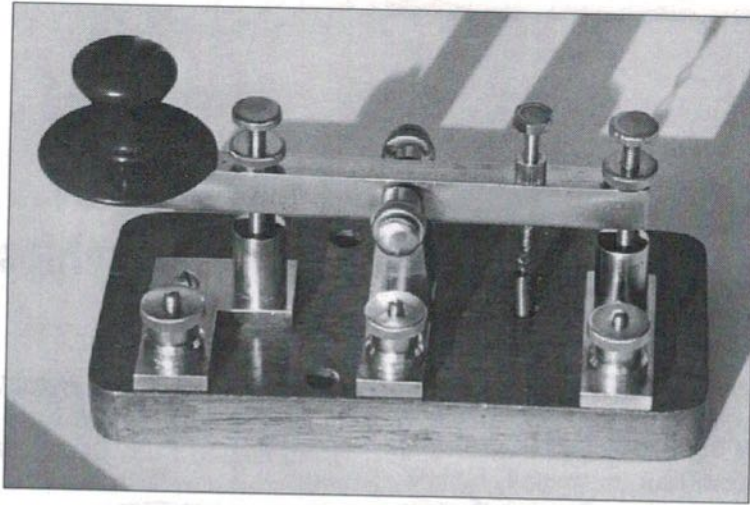
All useful information received will be published in MM in a later issue



Dulci key. Plate reads 'British Made. The Dulci Co. London. Electrical Mechanical Products'. The bearing assembly is cast integral with the narrow centre plate which is $7/8 \times 6\frac{1}{2} \times 3/16$ in, and the arm also appears to be a casting. Base dimensions $7\frac{1}{4} \times 5\frac{1}{2}$ in moulded in red plastic, but originally painted grey. Moulded on underside of base is 'P.O. FH/234 No. 162'. Also 'FH/LR'.

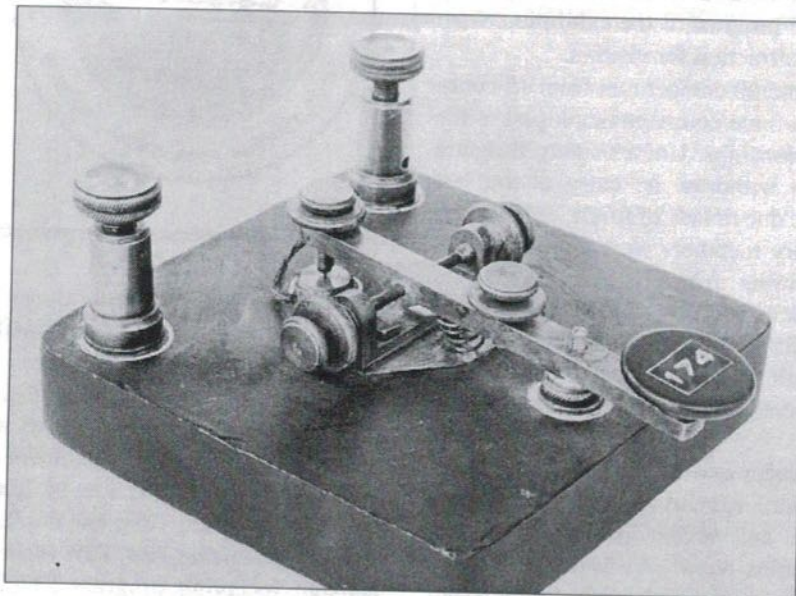
John Pears G0FSP also has one of these keys. The key plate is marked underneath 'No 162 F GPO C36/234' also '162 CB GPO TE/234'. The base has a black crinkle paint finish and is stamped GEC. The marking 'P.O.' on one and 'GPO' on the other seems to imply use by the Post Office. Can any reader comment on this possibility, or provide other information about these keys?

Collection: John Goldberg G3ETH. Photo: G3GKS



*Unknown key. Contact surrounds suggest spark key with oil cooling.
Note that both front and rear contacts are covered. Info requested*

Photo/Collection: Wyn Davies



Unknown key. Any information welcomed

Collection: John Elwood WW7P. Photo: Ray Nelligan

THE FIRST World High Speed Telegraphy Championships were held from 18 to 20 October 1995 at Siófok, Hungary. They were organised on behalf of International Amateur Radio Union Region 1 by the Hungarian Radioamateur Society (MRASZ).

Contestants were accommodated at the Hotel Agro, adjoining Lake Balaton, the largest lake in central Europe. An amateur radio station, with the calls HG95HST and HG3HST, was operational during the championships, and the local radio club set up a small HAM exhibition. The Hungarian CW Group (HACWG) also set up the PED (pile-up trainer) program at the exhibition as an added attraction for visitors.

Some 60 competitors from 15 countries in three continents took part in the championships. Unfortunately Bulgaria had to withdraw its entry at the last minute due to lack of funds, although its two jury members were able to attend. An entrant from Brazil also had to withdraw because of the high cost of travelling to Europe. Some countries sent full teams and in other cases were represented by single competitors.

Categories and Tests

There were six categories of competitor and seven different tests. The categories were: (A) Males (over 20); (B) Females (over 20); (C) Junior Males (up to 20); (D) Junior Females (up to 20); (E) Senior Males (45 and over);

World HST Championships

Results

Report by
László ('Lacy') Weisz HA3NU
(President of HACWG and
IARU Region 1 HST Coordinator)



(F) Senior Females (40 and over). The Male category was the largest, with 21 competitors from all 15 countries.

Competitors in these categories could take part in seven tests. These were: Reception of Letters, Numbers and Mixed Text; Transmission of Letters, Numbers & Mixed Text; and the Radio-amateur Practising Test, RPT (using the callsign receiving program RUFZ by DL4MM, ex DL3DZZ). (See MM40, p.23, for explanation. – Ed.)

Highest Individual Scores

The overall best results obtained by individuals were as follows. Speeds quoted are in letters/figures per minute based on the PARIS standard:

Receiving	Speed	Contestant
Letters	320	Oleg Bezzoubov UA4FBF (Russia)
Numbers	520	Oleg Bezzoubov UA4FBF (+540 outside the competition)
Mixed Text	280	Andrei Bindasov EU7KI (Belarus) and Djurica Maletin YU7DR (Yugoslavia)
RPT Test	546	Antal Hudanik HA3OV (Hungary) - Score 52 275.
Transmitting		
Letters	293	Nikolai Geliyasevich EU7KQ (Belarus)
Numbers	394	Andrei Bindasov EU7KI (Belarus)
Mixed Text	258	Andrei Bindasov EU7KI (Belarus)

Best Results In Each Category

Speeds quoted are in letters/figures per minute based on the PARIS standard:

Receiving				Transmitting			
	Letters	Figures	Mixed	RPT	Letters	Figures	Mixed
(A)	UA4FBP 320	UA4FBP 520	YU7DR 280	HA3OV 546	EU7KQ 293	EU7KI 394	EU7KI 258
(B)	UA4FJ 290	EU7KT 440	EU7KT 250	YO3RJ 394	EU7KT 256	RX4AK 305	EU7KG 198
(C)	EU7KJ 250	UA4FUM 310	EU7KJ 210	HA1DK 350	EU7KJ 265	YO4RHC 252	YO4RHC 184
(D)	HA3KY 230	EV1C8 360	HA3KY 210	HA3KY 398	...RA4-880PE... 189		HA3KY 165
(E)	UA3VBW 320	UA3BVW 460	UA3VBW 270	UA3VBW 485	UA3VBW 215	UA3VBW 274	YO9ASS 190
(F)	RV3ACW 220	RV3ACW 330	RV3ACW 170	HA5BIV 274	RV3ACW 152	RV3ACW 215	HA3GQ 122

Category Winners

	Name	Country	Points
(A)	Andrei Bindasov EU7KI	Belarus	558.4
(B)	Larisa Borisenko EU7KT	Belarus	596.0
(C)	Vitaly Gagarin EU7KJ	Belarus	570.3
(D)	Irina Teterskaya EV1C8	Belarus	551.7
(E)	Stanislav Zelenov UA3VBW	Russia	640.0
(F)	Liya Kalandiya RV3ACW	Russia	606.6

Team Scores

The final Team Results were:

	Team	Score
1	Russia	3346.9
2	Hungary	2877.3
3	Romania	2706.7
4	Belarus	2276.4
5	Macedonia	1081.3
6	Moldavia	799.5
7	Japan	607.5
8	Slovakia	432.5
9	Yugoslavia	421.5
10	Canada	363.2
11	Korea	357.7
12	Ukraine	336.1
13	Germany	269.5
14	Italy	138.6
15	Austria	107.8

Some of the Competitors

HL5AP, Cho, is a retired public relations manager and a founder member of the KARL. He told me there were no competitions in his own country and the Korean entrants had come to 'see how they work.'

JH9CAJ, Yasu, works for Texas Instruments and often goes to the USA. There had been a competition in August at a HAM meeting and he had been selected for the Japanese team.

JE1SPY, Ashi, is a top band DX fan. He brought with him from Japan a small suitcase containing a complete radio station: an FT850 + laptop + LW antenna. He set up his station in his room on the first evening and made 40 QSOs including 23 DXCC on 160 metres as HA/JE1SPY.

DF4PA, Mark, is a physicist working for the University of Kiel. He was disappointed with his score in the RPT (callsign receiving test). He has had far better results practising alone in his shack, but got the jitters with the jury sitting behind him.

OE4CSK, Georg, is a gynaecologist from Austria. He hesitated to come to the competition because he was worried about his CW ability, and didn't want to be last. We had several discussions beforehand and I finally persuaded him to come. I explained that the result was not everything. Before he went home, he told me I had been right. The competition had a nice atmosphere and he had met many fine CW hams.

OM2IB, Jan, is a telecommunications engineer in Slovakia, and is an EU champion in transmitting. He was sorry that he had been unable to repeat the result he attained in Belgium but he hadn't had enough time for training. Nevertheless, he had enjoyed the competition and was pleased to meet so many CW friends.

Where Are the West Europeans?

Fifteen countries from three continents in our first World Championships. That's not bad for a first step, but I have to ask - where are the western Europeans?

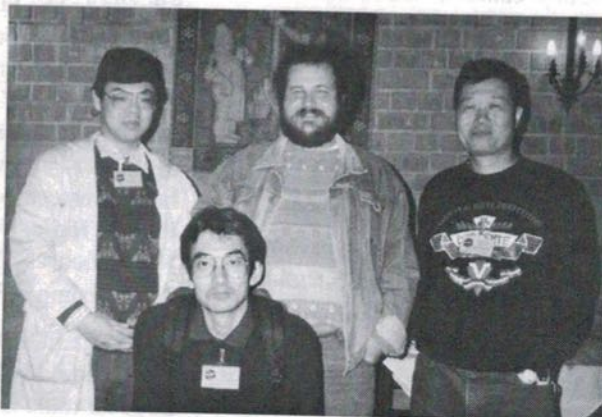
Thousands of them have been concerned about the no-code controversy and the future of Morse, but it's not enough just to be concerned. We have to use every means we can to make CW popular.

If there are successful championships in telegraphy, with participants from

continued on page 20



Competitors at the
HST Championships
Left to right, Yvette
HA3KY, Lacy HA3NU,
Nora HA4YY. Lacy
writes, "Would you like
to meet such beautiful
girls? Come to the next
HST Championships!"



Anti HA3OV,
centre, with
Japanese friends
JH9CAJ, JE1SPY
and JA1OQG



Lajos VA3RU, in a corner
of the HAM museum set
up for the Championships

many countries, that will stimulate interest and help to popularise Morse operating.

I can't accept such statements as "We don't have such activities in our country!" or "Receiving callsigns is an odd sort of competition!" To the first, I say "Why not?", and to the second, "It's not! Furthermore, anyone who can copy Morse onto a keyboard can have a go at it."

Japan, Korea and Austria took part in the HST championships for the first time. They came to learn, and to see what was involved, AND Japan won a medal in the RPT, a test which does not require outstanding skills.

The Most Important Thing...

Apart from countries that have never taken part, what about those that have participated previously? Why was there not a single competitor from Belgium or the Netherlands? Both took part in the EU championships when they were held in Belgium, so why didn't they come to Hungary?

Are people put off by the thought, "I can't win, so I won't go"? This is the attitude in Hollywood films where the hero always wins, and the only acceptable place is the first place. But I think Baron Coubertin had a better idea. He said "The most important thing ... is not winning but taking part."

We have two years till the next championships which will be held in Bulgaria. Let's work together for CW.

vy 73 de 'Lacy', HA3NU

(MM will welcome correspondence on the comments made by HA3NU in this article. - Ed.)

Readers' ADs

WANTED

DRAKE Model 1507 CW75 Keyer. Please reply to John Densem G4KJV, Cotswold, Startley, Chippenham, Wilts SN15 5HG, England.

STAND FOR HELIOGRAPH, tripod, three solid wooden legs. Jon Hanson G0FJT, tel: Taunton 01823 321187.

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OLD TELEGRAPH KEYS WANTED! Buy/Trade. My latest list of over 400 keys for trade is free. Send SASE (USA) or \$1.00 in U.S. cash for overseas postage. Tom Perera K2DCY, 11 Squire Hill Road, North Caldwell, NJ 07006, USA.

RAF TYPE 'D' Key, good condition. John Davis G0KCA, 93 Church Street, St Peters, Broadstairs, Kent CT10 2TX, 'phone 01843 863795.

BROWN BROS bug or model CSA combination key in exchange for keys, telegraph items or cash. Tom French, 151 Barton Road, Stow MA 01775, USA. May be away but mail will follow me; patience please.

Short Breaks

Father!

When attending the Great Exposition in Paris, in 1867, Morse was appointed Honorary US Commissioner with the particular duty of studying the electrical section. An Englishman meeting him by the telegraphic exhibits commented that it was a pity he was exhibiting nothing.

'Nothing!', replied Morse, 'why I can scarcely pass by the telegraph instruments, whether in the Exposition or in all the Offices of the Continent, and in England too, that I do not hear the cry of "father" from almost every one of them.'

News of the Platypus

Since their first arrival in the Colonies, naturalists had been trying to solve the puzzle of the platypus birth. But these unique Australian monotremes ('one-holers' as they were colloquially called) kept their secret. Did they produce young like a reptile by an egg? Or did they give birth to live offspring in their burrows? For almost a century the problem lay in observing the creatures in the process of birth.

In 1884 a visiting British zoologist, William Caldwell, settled the matter. He shot a platypus on the banks of the Burnett River, Queensland, which had laid one egg and held a second containing an embryo ready for laying inside. Caldwell sent off immediate word to Professor Liversidge at Sydney University.

Liversidge's splendidly terse cable to the British Association for the

Advancement of Science meeting in Montreal, Canada, that year, conveyed the long-awaited news to the scientific world: 'Monotremes oviparous ovum meroblastic' (monotremes produce young by means of eggs expelled from the body before being hatched, egg soft-shelled). Telegrams, indeed, would become the fast shorthand language of major discoveries and priority in science.

From Clear Across Australia, by Ann Moyal, pub Nelson, commissioned by Telecom Australia, 1984.

Encourage Beginners

Those who venture somewhat tentatively onto the bands with their QSD and lack of procedure are the top-flight operators of tomorrow provided they are encouraged by the more experienced. Explain if necessary that their code is below standard, but do so with consideration. There is no need to embarrass them by telling them that full spelling is unnecessary. Return to them with easily understood abbreviations and leave them to get the message.

Most struggling beginners are coping with two foreign languages; yours and CW. While the accepted common language in amateur radio is English we must spare a thought for those whose natural tongue is different, and appreciate the added burden.

We look to good readable code and concise transcription between thought and code.

The best teacher is EXAMPLE.

Geo Longden G3ZQS in FISTS Newsletter, September 1990

JOHN MCGINTY, G4GZQ, recently wrote to *MM* on the subject of 'scratchy' dots on semi-automatic keys. He enclosed a copy of a piece, 'Better Sounding CW', from Pat Hawker's 'Technical Topics' in *Radio Communication*, August 1984, which described a circuit by Charles Fletcher, G3DXZ, intended to remove the effects of contact bounce.

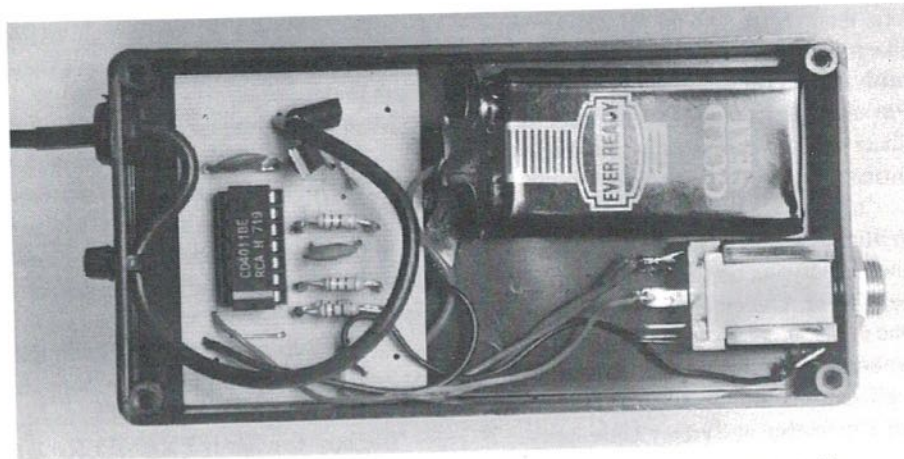
John wrote, 'I have built this little gadget and it really does work. In my experience, scratchy dots are more likely to be caused by too little pressure on the dot return spring rather than vibration of the dot contact spring.'

'This shows up particularly on the letter "x". The problem is completely eliminated by G3DXZ's circuit, and a

Eliminating Contact Bounce on Semi-automatic Keys

key set up for 50% mark/space ratio using an Avometer will show 60% when connected via this circuit.'

G3DXZ's circuit using a single chip is shown in the illustration, and he has given permission to *MM* to quote from

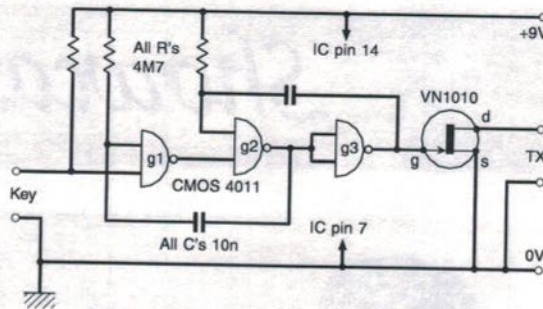


John McGinty's unit made up from G3DXZ's circuit, using a CMOS 4011 chip

Photo: G4GZQ

his original letter to Pat Hawker as follows: 'The circuit is a double interacting monostable multivibrator which locks-in then locks-out the key contact, so producing a clean make, starting when the contacts first touch, and then a clean break. Battery current is zero on standby and about $2.5\mu\text{A}$ with key down, resulting virtually in "shelf life" for the battery and eliminating the need for any on/off switch.

'The keying circuit for the transceiver is made by a vmos power fet such as the Siliconix VN1010 or equivalent. This will switch 0.5A at 100V which is probably enough for most transmitters!'



*Circuit of Charles Fletcher's 'scratch remover'.
Inputs of the unused IC gate should be grounded*

There is apparently a slight risk that RFI (radio frequency interference) might be picked up by overlong leads from the key into the scratch remover. If experienced, this problem can be overcome by the use of ferrite beads for simple RF filtering. **MM**

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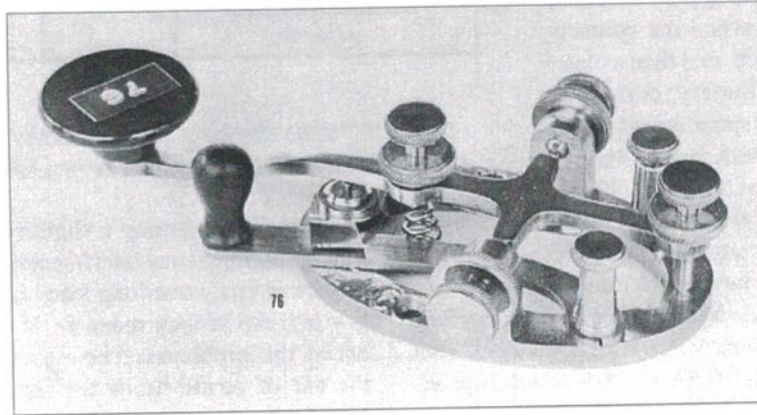
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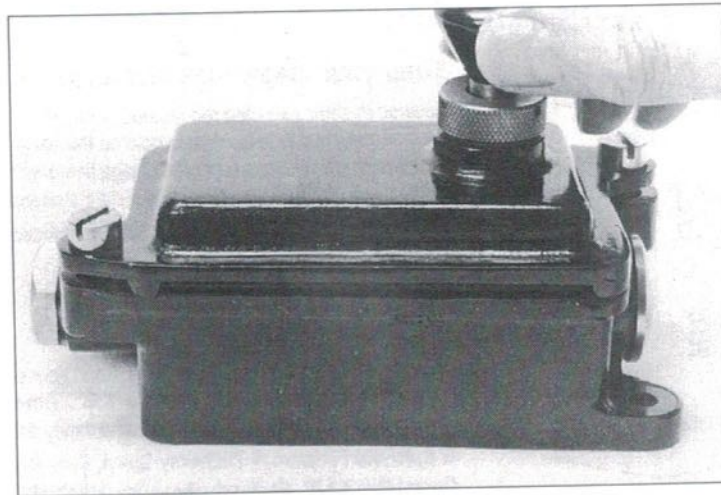
*Overseas payments must be by Visa/Mastercard or in Sterling.
Due to high costs, we can no longer accept payment by Girobank transfer*

Showcase



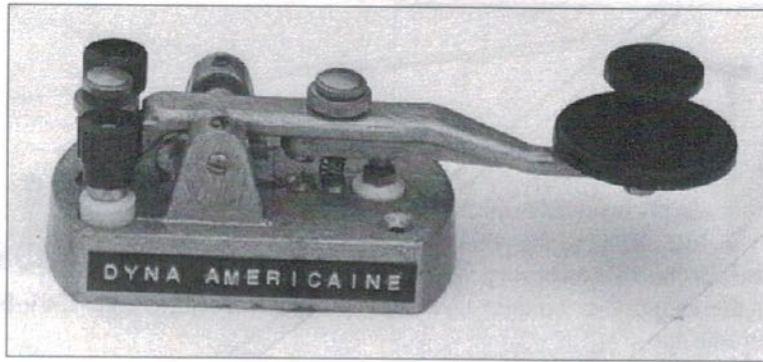
Key from The Electro Importing Co. (E.I.Co), New York

Collection: John Elwood WW7P. Photo: Ray Nelligan



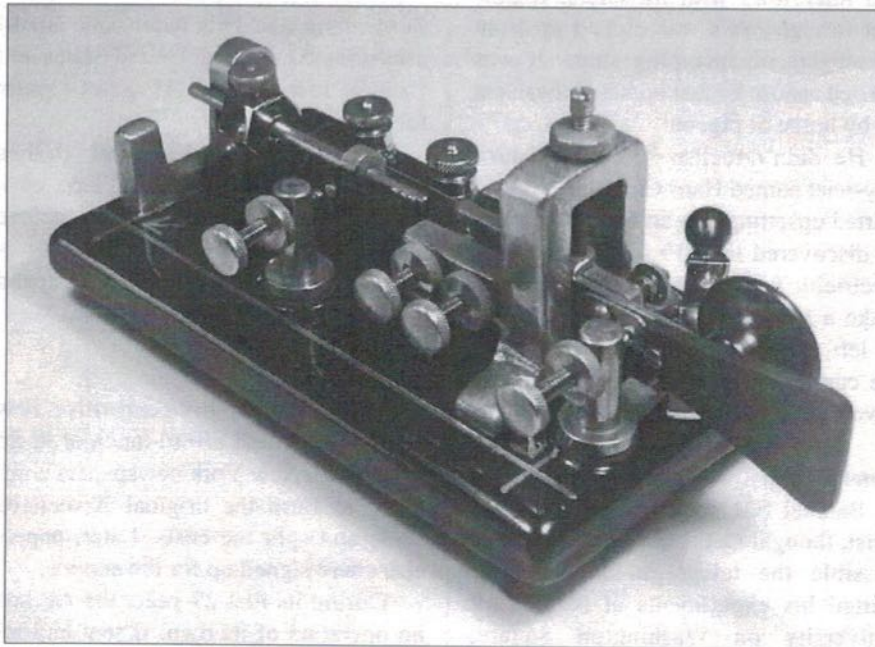
British Admiralty Pattern 2342 Key Signalling A/51.
Year of manufacture 1943. Made by Spartan of Canada Ltd.

Photo/Collection: Murray Willer VE3FRX



French Dyna Americaine key

Photo/Collection: Wyn Davies



'Standard' radio bug, c.1930, New York City

Photo/Collection: Dave Pennes, WA3LKN

*Featuring keys and other collectors' items of telegraphic interest.
If anyone can add to the information given please contact
Tony Smith, 13 Morley Road, Sheringham, Norfolk NR26 8JE*

NOW THAT THE AP is so deeply involved in electronics, let's recite for the youngsters, at the risk of boring them, some of the events that brought us to this electronic age.

Until the middle of the last century, newspapers got their out-of-town news by mail, carrier pigeon, pony express and interviews with travellers. Important foreign news was picked up from passengers on incoming ships. It was hurried ashore by fast boat and then sent on by horse or pigeon.

He didn't realise it, but a Danish physicist named Hans Christian Oersted started upsetting this arrangement when he discovered in 1819 that a current of electricity flowing through a wire will make a nearby needle turn to the right or left, depending on the direction of the current. In short, the man had discovered **electromagnetism**.

Enter Morse

Samuel F.B. Morse, then a famous artist, thought Oersted's principle made possible the telegraph. In 1835 he started his experiments at New York University on Washington Square, using wire of the sort then used in ladies' hoop skirts.

In 1837 Morse and Alfred Vail collaborated on a Morse code of dots and dashes, but it wasn't well thought out. Seven years later it was revised to give the most commonly used letters the

Morse and the Associated Press

(from *AP World*, Winter 1961-62)

shortest signals. This latter code is still used somewhat in the United States and Canada. It moved the AP news reports for 80 years.

Originally the dots and dashes were inked on the moving tape of a crude recorder. Years passed before telegraphers discovered they could decipher the signals by ear and thus speed up the wire.

Expensive

The telegraph proved expensive. Few newspapers could afford much of it. So in 1848 six New York newspapers combined to form the original Associated Press and split the costs. Later, papers elsewhere signed up for the service.

During its first 27 years the AP had no operators of its own. It sent and received its news through the telegraph companies, the same as any citizen would. Then in 1875, when James W. Swinton was general manager and Walter Polk Phillips was his assistant, the AP got its first leased wire. Western Union objected, but AP insisted.

It was a 226-mile circuit between New York, Philadelphia, Baltimore and Washington. Phillips hired a day operator and a night operator for each city. Soon a second wire went from NY to Buffalo and on to Chicago. Phillips later became the second man to head the AP's Washington bureau (1879–1881). He was the man who devised the famous Phillips Code, remnants of which we still see in AP wire messages.

Toilsome Longhand

Through these years the telegraphers toilsomely took down the news by long-hand. All day long they wrote in their fast scrawl. One result was that all telegraphers wrote alike. Young operators imitated their elders, so that the 'telegrapher's script' became traditional. Thomas A. Edison's famous signature is a classical example of this script. Compare the handwritings of any two former Morse men today and you'll see a resemblance.

The old Morse senders plugged along at about 22 words a minute and the receivers just managed to keep up with them. That was a good cruising speed. Sometimes they worked faster. During one demonstration Phillips, in New York, and another operator in Philadelphia listed as 'N.J. Snyder, Esq.,' cleared 2731 words in one hour. Old S.F.B. Morse was so happy when he heard this that he had it recorded at the 1867 Paris Exposition.

Then came the typewriter, never called anything but 'the mill' in telegraph circles. The first telegrapher to use a mill, reputedly, was John Paine, Nashville operator for the old Western

AP. The idea spread fast. Now the senders couldn't send fast enough to keep the receivers busy. The Phillips Code helped remedy this.

Phillips Code

The Phillips Code was a set of abbreviations for words and phrases commonly contained in news stories of that day. Some of the abbreviations eventually fell into disuse because words like **haggle** (HAG) and **plenipotentiary** (PNPY) practically disappeared from news stories.

E.M. Hood, a former telegrapher who headed the Washington AP bureau in 1908 and 1909, used Phillips Code in taking notes at hearings. He was noted for exact and copious notes he brought back.

Phillips Code, plus the invention of the 'bug', a semi-automatic key, brought the speed of AP wires to about 35 words a minute. There the situation stood for more than 30 years.

Enviably Position

In a day of less specialisation when many substantial Americans got their education by osmosis, the telegrapher was in an enviable position to learn. Railroad presidents usually were former telegraphers. So were many newspaper folk.

In 1902, Phillips wrote that 'The newspaper profession is more largely recruited from the telegraphic ranks than from any other one source. There are more than 100 telegraph operators on the New York and Brooklyn newspapers alone – reporters, copy readers, editorial writers.' AP operators found

The Phillips Code

Walter P. Phillips devised this set of abbreviations which speeded Morse transmission of news after the invention of the typewriter.

Many of the 3000 standard abbreviations suggested their own meanings on sight. And in context most were patently obvious.

Samples: APC, appreciate; PLS, please; XOV, cross over; XNL, constitutional; XXN, cross-examination; ICW, in connection with; XGR, legislature; TWM, tomorrow morning; YAP, yesterday afternoon; NUP, newspaper; POX, police.

There were some comical blunders when operators allowed their minds to wander. One AP operator in Florida had an epidemic of **small police** breaking out in the state. Another in Maryland handed his editor a string of 20 **erroneous** bulletins the day Floyd Collins was found dead in a Kentucky cave. He, recently employed, thought EOS meant erroneous instead of "extraordinary occasion service."

Phillips Code speeded up Morse transmission about 30 percent. By full use of the code the gain might have been 100 percent, but with danger of inaccuracies and of causing receiving operators to falter.

Incidentally, AP receiving operators rarely faltered. Records were kept, and very few of them 'broke' oftener than 8 or 10 times a month.

The last AP operator at the *Bluefield* (W. Va.) *Telegraph* – C.J. (Tina) Thompson – didn't break at all during his final three years on the job. When the Morse wire was printerised, Thompson became an editor on the paper. He's still there.

it inconvenient to have a former telegrapher as wire editor. The sending operator couldn't make remarks on the wire about 'Old Chowderhead' since 'O.C.' would be sure to hear it, even if he were in the hallway or washroom.

Advent of the Printer

Now, from the very beginning of Morse telegraphy it was generally assumed that sooner or later some researcher would invent a printer-telegraph to pick up words at one end of the line and print them automatically at all points along the line.

Dozens of these devices were invented. Most of them were flops, but several were fairly successful when used between only two points. What the AP needed was a system that would serve a string of newspapers, all together on one wire.

Three Chicago men finally developed a printer system suitable for newspapers. Joy Morton, who had made a fortune from salt, supplied the money. Charles L. Krum, a refrigeration engineer, and his son Howard, performed the experiments. So they named their printer the Morkrum.

It revolutionised the news-gathering business. AP first tried it out on a NY city circuit in 1913. Twenty-two years later AP used it to replace its last Morse circuit – the New Jersey state wire.

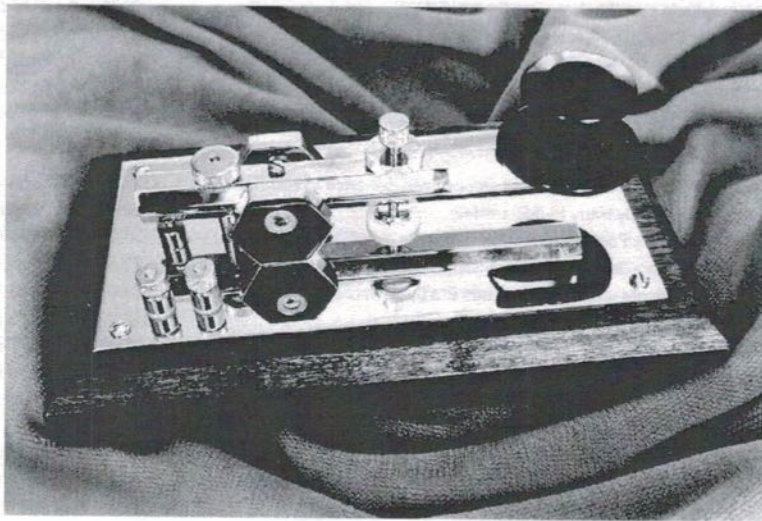
(Extracted, with permission of the Associated Press, from the "Electronics" pages of AP World, Winter 1961–62, author unknown. There will be more about Morse with the AP in two further articles from AP World in future issues of MM.)

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MAN HAS FOREVER attempted to communicate over long distances, with more or less elaborate means according to the era, in order to transmit news over the entirety of a territory.

Many inventions saw the light of day, but with little success due to their inefficiency. However, one decisive step was taken in 1793, thanks to the invention of Abbott Claude Chappe [1], to whom we owe the first long distance communication system worthy of the name 'telegraph'.

His first 'machine' was set up for a very short time in Paris, authorised by the legislative assembly. It was eventually destroyed by the distrustful people who thought it could be used to correspond with Louis XVI who at that time was imprisoned in the Temple.

First Official Line

However, some scholars took an interest in the project and successful experiments were conducted on 12–14 July 1793, between Saint-Fargeau park and Saint-Martin-du-Tertre, a distance of 33 kilometres, with an intermediary station at Ecouen.

On August 4 that year, Carnot [2] persuaded the Committee of Public Health to establish a line between Paris and Lille. Its construction was undertaken in great haste due to the pressing needs of communication, and was finished in March 1794.

MM43 – Christmas 1995

The Chappe Telegraph in France

by Boris Real F5TFS



Claude Chappe

A previous article in *MM* (The Telegraphic Inventions of Dr Dujardin – MM35, p.18) described how the first electric telegraph in France was required to display the same signals as those used in the Chappe optical telegraph. This article describes how the Chappe telegraph provided long-distance communication across France long before the electric telegraph came into being – and pioneered the use of telegraphic codes which were later indispensable in Morse telegraphy

Chappe was appointed 'Telegraph Engineer' and the line carried the news of the retaking of Landrecies from the Imperials to the Convention on 19 July 1794. This new means of long-distance communication revolutionised the transmission of information because it was the most trustworthy system at the time.

State Monopoly

Given the strategic importance of Chappe's invention, it was quickly declared a state monopoly. The law severely punished anyone attempting to use the telegraph for personal or commercial use. Considering the political instability of the time, with the people in the middle of a revolution, this restriction was not surprising.

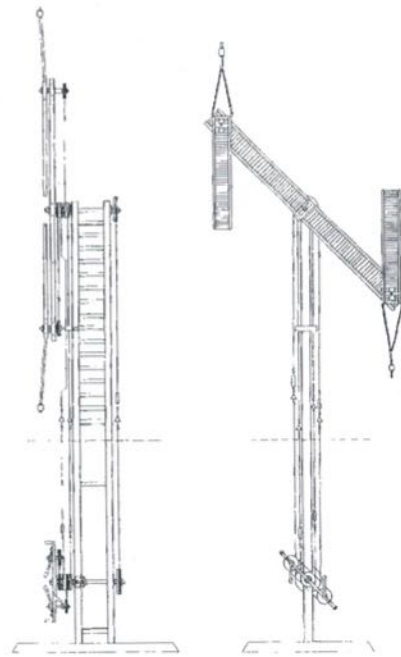
The operation of Chappe's aerial telegraph, using articulated arms, was very simple. A vertical wooden mast, about 4-5 metres high, supported a horizontal beam, of much smaller size, called the 'regulator'. Arms were attached to each end of the regulator, and these were called 'indicators'.

The 'stationaries' (operators) activated a system of ropes and pulleys enabling the regulator and the indicators to move on their axes to take up vertical, horizontal and oblique positions. To avoid observation errors due to the similarity of certain positions, the number of signals was limited to 92 and each arm combination was numbered 1 to 92.

Ingenious Codification

A pre-defined list (the 'Vocabulaire') assigned each letter of the alphabet, numbers, words and even frequently used sentences to each position of the

telegraph arms. The Vocabulaire of 1807 had 92 pages and each page had 92 lines so a total of 92 x 92 signals was possible. For example, the word 'Ignor', on page 44, 11th line, was signalled as 44-11.



*Working arrangement of the
Chappe telegraph*

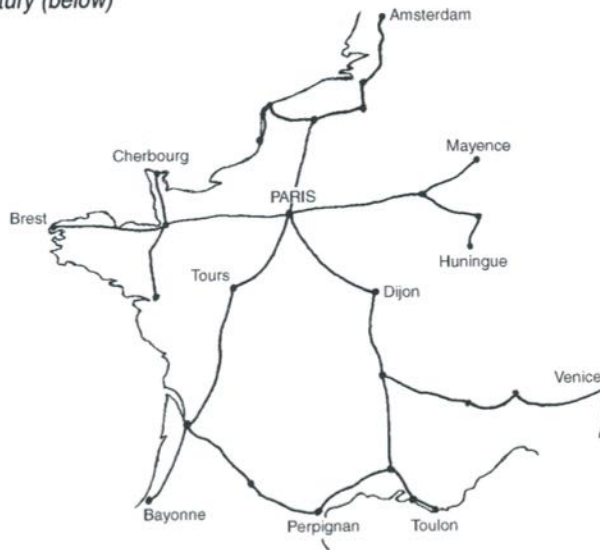
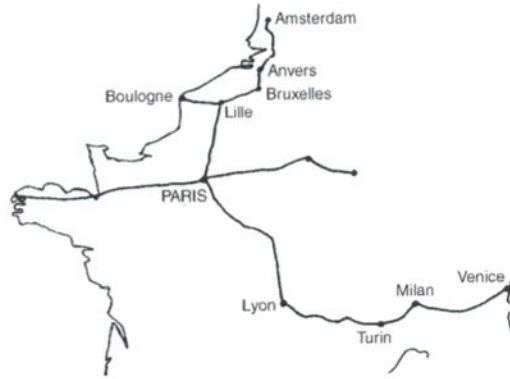
If the principle of Chappe's aerial telegraph brought a radical change in the means of communication at the time, the idea of codification, assigning codes to words and even entire sentences, was just as ingenious. It brought with it the means of achieving rapid communication adopted by the future electric telegraph of the 19th century. It was, in fact, the pre-defined and standardised telegraphic code (albeit visual) that ensured

↖	1	↗	24	↖	47	↖	70
↑	2	↘	25	↖	48	↘	71
↙	3	↘	26	↗	49	↗	72
↓	4	↖	27	→	50	↖	73
↖	5	↘	28	↖	51	↖	74
↗	6	↖	29	↖	52	↘	75
↖	7	↘	30	↖	53	↘	76
↘	8	↘	31	↖	54	↘	77
↖	9	↘	32	↘	55	↘	78
↖	10	↘	33	↖	56	↘	79
↖	11	↖	34	↖	57	↖	80
↖	12	↘	35	↖	58	↘	81
↖	13	↘	36	↖	59	↖	82
↖	14	↖	37	↖	60	↖	83
↖	15	↘	38	↖	61	↖	84
↖	16	↖	39	↖	62	↖	85
↖	17	↖	40	↖	63	↖	86
↖	18	↖	41	↖	64	↖	87
↖	19	↖	42	↖	65	↖	88
↖	20	↖	43	↖	66	↖	89
↖	21	↖	44	↖	67	↖	90
↖	22	↖	45	↖	68	↖	91
↖	23	↖	46	↖	69	↖	92

The 92
correspondence
signals of the
Chappe telegraph

Extent of the Chappe Network

*In 1799 (above),
in 1812 (right),
and in the mid-19th
century (below)*



practicable and reliable communications over the whole territory.

The network of telegraphic lines, radiating out from the dome of the Louvre in Paris, spread in all directions across France. Relay stations were located 9–15 kilometres apart, sometimes more depending on the terrain, and were usually sited on an elevated point or the top of a tower or tall building.

Rapid Relaying

Each station had a direct view of the preceding and following stations. The stationaries received the signals by means of long-distance observation and retransmitted each signal as it was received. As a result of this rapid relaying, it took, on average, about thirty minutes to send a signal from Paris to the furthest point in the territory. When the message reached the last receiving station, it was sometimes necessary to relay it further by horseback to destinations not directly served by the telegraph.

While Chappe's aerial telegraph was undoubtedly efficient, it had its disadvantages. Based on visual recognition of signal arm positions, its use was severely restricted, or even impossible, during bad weather or at night. Furthermore, the repetition of the message from station to station before reaching its final destination was sometimes the source of error arising from inaccurate readings

of the positions of the telegraphic arms.

Help From Others

While the apparatus was conceived by Chappe, he did receive help from others, including his brother, Jean, and especially the watchmaker Breguet [3]. The same Breguet proposed, in 1797, another optical system, based on a dial. This, however, was not selected for use as, at the time, it had not been perfected.

So, before the discovery of electricity and magnetism, and their application to electric telegraphy, Chappe's aerial telegraph assured, for a number of years, the transmission of messages and news throughout the territory of France, earning Chappe a certain celebrity in the process.

References

[1] Claude Chappe (1763–1805): Physician, born Brûlon, France. The aerial telegraph was his principle invention.

When this fact was put into question, he committed suicide. His brother Jean (1760–1828) was his collaborator.

[2] Lazare Carnot (1753–1823): Engineering officer, born Nolay, France. Supporter of the revolution, he created, organised and fought with its armies. Carnot aided Claude Chappe with his telegraph project.

[3] Abraham Breguet (1747–1823): Born Neuchâtel, Switzerland. An inventor of precision scientific instruments, he collaborated closely with Chappe. **MM**



A repeater station on the North line

IN ALMOST EVERY SUBJECT we may study there are efficient and inefficient ways to go about learning it. It seems foolish to go about learning in a hard way, if we know of a better one.

Many, many people have managed to master the Morse code by methods which we cannot recommend today, but they have done so at a heavy cost in time and effort, and often have experienced great discouragement along the way.

They have managed by persistence to overcome the stumbling blocks and achieve success in spite of them. But countless others have got stuck and have given up at some slow speed, generally less than 10–12 wpm.

Through the years all sorts of schemes have been devised for ‘memorising’ the code, some of them quite ingenious. Most of them involve some kind of visualisation: a pictorial or systematic arrangement based on structure, or a ‘chain’ of relationships of some sort, adding to or exchanging components of one character to obtain another.

No Translating!

A few have devised words or phrases presumed to have a sort of ‘sound-alikeness’ to the code character. Such methods probably would help a person who might sometime need to signal for help in a dire emergency, but they have no value for telegraphic communication.

Methods not Recommended

by Wm. G. Pierpont N0HFF

There is never any reason to see the code in written form. Never translate ‘dit plus dah means A’ and then write it, or as another has said: ‘If you find yourself hearing “dahdidahdit” and saying to yourself “Aha! That’s a ‘C’.” and then writing it down, you’re in trouble – that’s translating.’

Most of these well-intentioned aids to learning have overlooked the fact that the code letters are an alphabet of sound. These ‘aids’ have interposed something else between the letter sound and the letter. Most of these methods present their schemes to the eye, not the ear.

Sound-Alikes

Even those which purport to use sound (such as ‘sound-alikes’) fail to provide the necessary unity of sound pattern (partly because they are too slow, but also because the ‘sound-alikes’ are extraneous and distracting).

Both kinds require an extra step – a translation step – to get there. Those which require some sort of analysis (such

as how many dits and dahs) of each character in order to identify it, or to run through a series of some sort, also have introduced needless steps which inevitably slow the learner down, and usually severely limit his achieving speeds over about 5–10 wpm.

Very many of those who originally learned the code from a printed chart of dots and dashes began the bad habit of counting the number of dots and of dashes from a mental chart. Then they must decipher the longer characters by counting: for example, to separate B from 6 and 1 from J.

Some Managed It!

Some of these hams were able by much practice, and perhaps realising the nature of the problem, to overcome their speed plateau. (I knew one experienced ham-ex-navy-commercial operator who could go right along at 20 wpm this way, but that was his ultimate limit. He loved the code, but could never advance a step further. That was as fast as he could analyse: pretty fast at that!).

Those who have learned by the 'sound-alike' methods, (e.g., they hear 'didah', and it sounds like 'alike', which they have been taught means 'A') rarely reach even a 10 wpm plateau.

One method extensively advertised for many years 'taught' the beginner by

the scheme 'Eat Another Raw Lemon,' which was supposed to remind him how each of the four letters E A R L was formed, each one adding one element to the previous one.

This was illustrated by large printed dots and dashes. There must have been a good many who started out this way, and in spite of it, at least some of them finally managed to become proficient. I knew of one such amateur who got to around 20 wpm that way.

Impeding Progress

The expert teachers tell us that any kind of printed dots and dashes or any other such pictorial impressions will only impede the student's progress when he is beginning to learn the code. All such methods violate good pedagogy, because they do not teach the code as actual sound patterns, as it will be heard and used.

They also require the student to learn something (which he must later forget in order to advance) in addition to the sound of the code itself. While these methods may seem to make it easier at first, they actually make it much harder, or even impossible, to advance. The wise teacher and student will avoid these approaches.

(Reprinted and specially edited for MM from Bill Pierpont's book The Art and Skill of Radio-Telegraphy)

G-QRP Club

The G-QRP Club promotes and encourages low-power operating on the amateur bands with activity periods, awards and trophies. Facilities include a quarterly magazine, Morse training tapes, kits, traders' discounts and a QSL bureau. Novices and SWLs welcome.

Enquiries to Rev. George Dobbs G3RJV, St Aidan's Vicarage, 498 Manchester Road, Rochdale, Lancs OL11 3HE. Send a large s.a.e. or two IRCs



I HAVE BEEN INTERESTED in key design ever since I learned Morse, especially keys with spring contacts. I think the feel of the 'collapse' of a leaf spring is an advantage as the user instinctively increases pressure to 'make' the contact. I think this advantage is often overlooked.

I had long tried to get what I thought would be an ideal key and, in 1985, shortly after getting my amateur 'A' licence, persuaded Messrs Marconi International to sell me an up-to-date example of their Marine Key. This took many persistent telephone calls to several of their offices, and I finally got one for the not too unreasonable price, at that time, of £75.00.

It is less substantial than the earlier models and, rather surprisingly, is built into a grey plastic box of the Vero-box type. It works beautifully however, the main difference being that it is less noisy than the old brass-cover type. I assume from this that the plastic cover has some use, unless the operator likes to monitor his/her sending from the key clicks.

Various Keys Tried

Having found how easy this key was to use, I was surprised to find how well older keys, such as the Admiralty Pattern, the

*Modern Marconi International
Marine Key*

38

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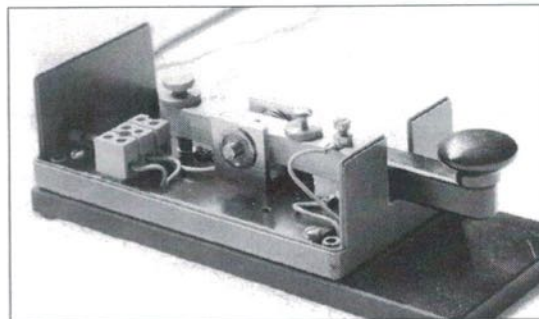
Search for the Ideal Key

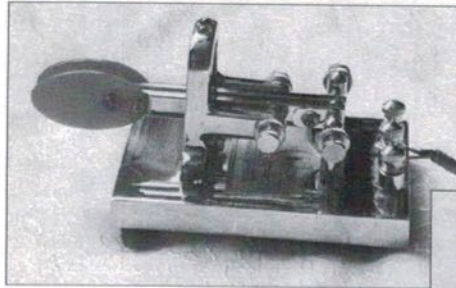
by Rik Whittaker G4WAU

RAF Type D, and even more modern Post Office keys, were to use.

Moving on to paddles, I tried the Bencher twin-paddle with the KHZ electronic keyer (described in MM27, p.28), modified to use transistor output keying. I later changed the Bencher for a twin-paddle Vibroplex, and since then I have acquired a Brown Brothers combination key.

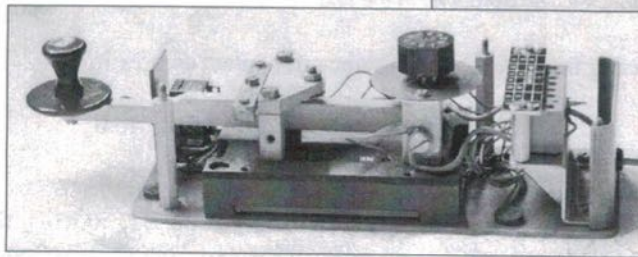
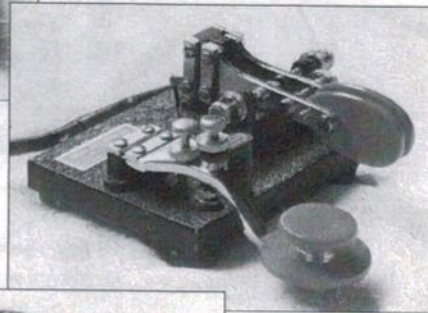
On one base this has a leaf-sprung twin paddle key together with an American style straight key. The paddle in this combination set, however, does not



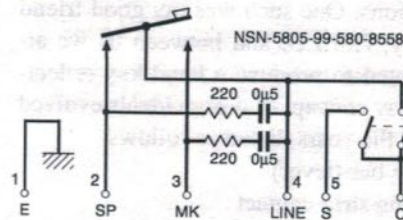


Brown Brothers twin paddle plus
straight key combination set

Vibroplex Iambic
twin paddle DeLuxe



NATO key with key click filter built into
base and (right) circuit of the key,
showing the arrangement of the filter



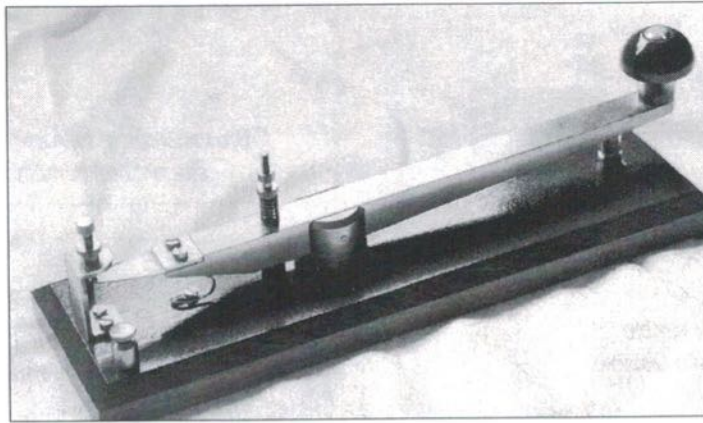
seem to work quite as well as the Brown Brothers basic twin-paddle design made in the same period.

NATO Key Problem

An interesting problem arose with a used Naval NATO key which I bought at a rally recently. These keys have a key-click filter built in their base. Using

a key at my evening class (see MM28, p.28) I need a sidetone to send to the students and for this I use a Star Master Keyer.

However, when I plugged the NATO key in it proved to have a time constant which caused the keyer to send at a constant slow dash rate whenever the key was depressed. As a result, I had to



Long Lever straight brass key, designed by G4WAU, built by G0LLU, as described in the text

bypass the filter when using the keyer to provide a sidetone!

Design Ideals

In teaching Morse to evening classes over a number of years, one or two of my students have had engineering connections. One such was my good friend Andy, G0LLU, and between us we attempted to produce a hand key reflecting my concept of design ideals evolved over the years, listed as follows:

- Long bar (lever)
- Spring strip contact
- Ball bearing or roller bearing race
- Leaf spring (for preference)

From my rough sketches, and I think with help from his father, Andy produced two keys of the following design (see photo above also):

- Overall length of base – 12.75 inches
- Length of lever, excluding spring contact strip – 11.00 inches
- Length of lever, including spring contact strip – 12.25 inches

40

Distance of contact centres from pivot – 4.5 inches

Distance of knob centre from pivot – 7.25 inches

Weight – approximately 3lb.

Interestingly, the ratio of the distances measured from the pivot point to the contacts and the knob is 1:1.61, which is very close to the 1:1.62 of Dr. Jim Lycett's 'Golden Section' Key, and within the acceptable performance index range of 1.5 to 2.8 described by him in MM27, p.13.

Spring Problems

Comments from Andy during and after construction of the key indicated that the spring brass contact strips were difficult to obtain and, also, that the choice of a leaf tension spring was causing problems. In the end, we could not find a suitable leaf spring, nor could we obtain a small helical spring of suitable

continued on page 48

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Your Letters

Readers' letters on any Morse subject are always welcome, but may be edited when space is limited. When more than one subject is covered, letters may be divided into single subjects in order to bring comments on various matters together for easy reference

55

With reference to recent correspondence on the use of the signal '55' (MM38/39/40) I wish to emphasise that the letter from Dr Martin Zurn in MM38, p.41, is an official statement issued by the Activity Group CW (AGCW-DL e.V.). Dr Zurn signed that letter in his capacity as the EUCW Coordinating Manager appointed by the AGCW.

The AGCW-DL Board confirms its view that there is no objection to the use of '55'. The meaning is '(I wish you) good success' or 'much success' or 'many points'. This signal perpetuates nothing else besides the meaning explained above.

Since this signal has been used for 45 years, is internationally known and used, with no other meaning or intention, we do not have any objection against its use.

Of course, nobody is forced to use something they do not like. But '55' is used not only in our country but also internationally. Its meaning is to be found not only in publications from Germany but also in books (for example) from Czechoslovakia and Switzerland.

This is an official statement. The AGCW-DL would of course avoid such a statement if there was the slightest

proof of a political meaning to the '55'. This is not the case so we do not hesitate to recommend the use of this signal.

Honi soit qui mal y pense!

Otto A. Wiesner DJ5QK

Member of the AGCW-DL Board

(This correspondence is now concluded. - Ed.)

Iambic Keying

It is with some trepidation I write to express less than 100 percent agreement with Gary Bold (MM42, pages 30-33). However, I believe that the most important part of an electronic keying system is the man/machine interface, i.e. the paddle. If you cannot reliably instruct the keyer as to your wishes then no amount of sophisticated electronics will second guess for you.

Paddles need not cost the earth but up to a certain point you get what you pay for; good engineering is not cheap. Some people manage very well with nail-file paddles but most of us need all the help we can get if we are to send good code.

We all have personal preferences and the important thing is to feel comfortable with your paddle. A good paddle will command a high resale price so it may be cheaper in the long run to pay

a little more for quality and have the pleasure of its use.

I have to be convinced that for the majority of amateurs there is any real benefit in iambic keying. In fact I would suggest it is a very good way of increasing your error rate. Some years ago an article in a US magazine, extolling the virtues of iambic keying, ended up by saying 'it comes into its own at 40+ wpm but is not worthwhile at less than 25 wpm.'

It may be fun to learn a new skill but don't think that iambic keying is necessarily the trademark of the expert. In fact, many outstanding CW operators – 30+ wpm operators – do not use it and I suggest that most of us would better spend our time trying to reduce our error rate by simple keying rather than learning the iambic style.

*Gerald Stancey G3MCK
Staines, Middlesex*

Keys – Further Info

The following information may be of assistance to readers in identifying various unknown keys, etc., in past issues of *MM*.

MM2, Showcase, Fig. 10 – Unknown key. This is a 'Speed-Bug' manufactured by Brooklyn Metal Stamping Corp., Brooklyn, NY.

MM3, Showcase, Fig. 15 – The McElroy key shown is Model P-500.

MM36, p.35 – 'English Heliograph'. This has a tripod with English markings which may not be original, and may have led to incorrect identification. I have a similar heliograph to the one shown but mine was made in Portugal. It is marked atop the shutter mechanism 'Fabrica de

Braco de Prata – Lisboa'. The rectangular long base, with the mirror mounted on it serves a dual purpose. It is also a sighting tube with a small hole at the operator's end and the large hole, seen in the photo, is a sight with cross hairs.

MM39, p.34 – The retractable key at the top of page 34 has been described to me by Henri Heraud, F6AOU, as an 'ER 17/22 vertical key, used in the French army artillery until WWII.'

*John Elwood WW7P
Phoenix, Arizona, USA*

Regarding Henri Jacob's 'unknown key' on page 35 of MM42, I bought an identical key in 1990 at the Interradio fleamarket in Hannover. The seller, from the GDR, told me this was a key from the Swiss Army of the 1930s, used for code training.

There are terminals for five headphones, marked 'T' (two can be seen in the photo), and there is a similar terminal for two wires for the key contacts.

Inside the wooden base of my key, in parallel with the terminals, is a 2000pF 200V capacitor marked 'LECLANCHE', which might be the name of a Swiss or French company?

*Gregor Ulsamer DLIBFE
Emden, Germany*

The 'unknown' aluminium key on page 35 of MM42 is definitely a Swiss Army standard key. I used them way back in 1965 for my pre-army CW training. I also have the same key in my collection, bought as surplus when the Swiss Army phased out Morse code.

*Bernhard Pfander HB9ASZ
Belp, Switzerland*

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Clansman Keys

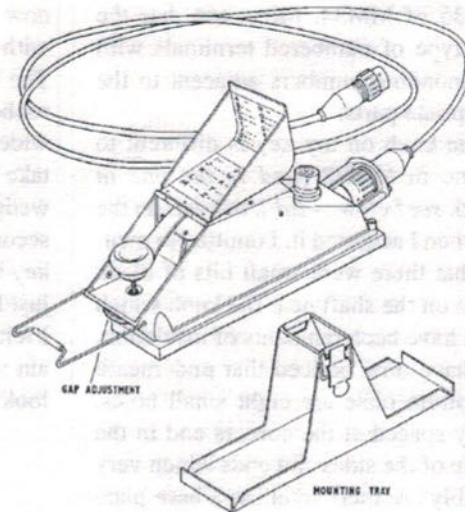
The unknown key, marked S.R.D.E., Serial No. RO13, with hinged cover, shown on page 34 of MM42, is an early model of the Clansman vehicle radio key. It is designed for use with the Clansman UK/VRC-321, -322 and UK/PRC-320 series of radio sets when they are installed in military vehicles.

A permanently connected lead from the key plugs into the AUDIO socket of any of the above mentioned radios or harness boxes, whilst the headgear is plugged into a socket mounted on the rear sloping section of the key.

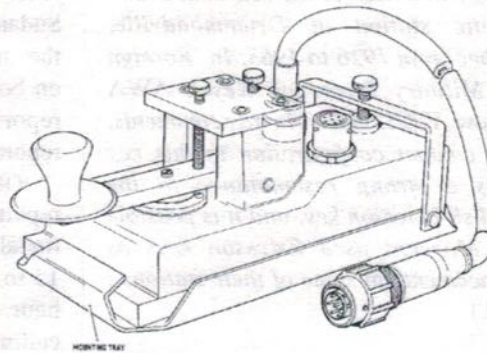
In service, the key may be used either loose or clipped into a special mounting which is screwed permanently to the vehicle.

This design of key has been changed (probably for ease of manufacture) to the type shown in the lower drawing. I have one of the later models, Ref: 5805-99-652-6572. My key was made at the Royal Ordnance Factory, Blackburn, and has a very nice feel.

Ian G. Mant G4WWX
Childwall, Liverpool



*Early key used with Clansman radios
installed in vehicles
(from AC-61172 of April 1976)*



*Later key used with Clansman radios
installed in vehicles
(from AC-61172, Amendment 1, of June 80)*

The unknown key on page 39 of MM38 looks very similar to mine shown on page 35 of MM34. Mine, too, has the same type of numbered terminals with corresponding numbers adjacent to the appropriate parts.

The knob on my key is different to the one in MM38 (*and to the one in MM16, see below. – Ed.*), but was on the key when I acquired it. I omitted to mention that there were small bits of black plastic on the shaft near the knob which might have been remnants of insulation.

I have now noticed that underneath the bottom plate are eight small holes, evenly spaced at the corners and in the middle of the sides and ends which very probably are there to allow a base plate to snap on.

John Hann
Guelph, Ontario, Canada

(A similar key was shown in MM16, p.15, belonging to Murray Willer VE3FRX. His key was used at the Marconi transatlantic station at Drummondville, Quebec from 1926 to 1963. In 'Foreign and Military Telegraph Keys', AWA Review, Vol.3, 1988, Murray comments, 'The contact configuration in this key bears a strong resemblance to the Swedish Ericsson key, and it is possible that Marconi used Ericsson keys as replacements in some of their stations'. – Ed.)

Improving the Straight Hand Key

The article by **Hideo Arisaka** (MM41, p.19) has improved my sending. Of late, this has been a struggle, with more than my usual errors. I put this down to my age and co-ordination going, but

after putting a wedge under my Kent key as suggested in the article, I can now send in a more relaxed manner, with only an occasional mistake.

The wedge is under the two left-hand rubber feet of the key. It's about 1¹/₄in wide and has two holes drilled in it to take the feet. On the underside of the wedge there is a strip of Velcro, with a second strip glued to the table top. If the key is to be used without the wedge, it is just lifted out of the two holes.

I felt I had to write to say how pleased I am with the results. Best wishes, and I look forward to the next issue of *MM*.

John Walder-Davis G0KCA
Broadstairs, Kent

Aircraft to Ship Contact

From 1952 to 1955, I served with No. 70 Squadron RAF, at Fayid airfield in the Canal Zone in Egypt, flying Valetta aircraft which replaced Dakotas.

A regular route was from Fayid to Aden with a refuelling stop at Port Sudan, halfway along the Red Sea, and the main task of the Air Signaller on board was to make regular position reports on the hour and operational reports on the half-hour.

Other tasks were to obtain weather reports and to listen out on the International Distress Frequency of 500kc/s at 15 to 18 and 45 to 48 minutes past the hour. At other times this was used as a calling frequency for shipping.

During one trip, we were about an hour from Port Sudan, southbound for Aden. I had just finished listening from 15 to 18 minutes past the hour when I heard a ship calling on 500kc/s. I replied to the call and he at once queried my

5-letter callsign, as ship callsigns consisted of just 4 letters.

I replied, explaining that we were an aircraft and asked if we could have a bearing and the ship's position. To my delight this was OK'd and I was able to hand to our navigator the position of the ship (a tanker) and the bearing. To say that he was surprised was an understatement!

I wonder if other readers have had other unusual Morse experiences which they could send to *MM*?

John Densem G4KJV
Startley, Wilts

I'm Reading Your Key Clicks

I have just read Brian Faulkner's article 'My Days as an Amateur Morse Examiner' in *MM23*, p.38. It reminds me very much of my own Morse test just before Easter 1970.

I arrived at the Liver Building on the Liverpool river front, nervous and a bit early. The room was large with a table at one end on which were two keys plus headphones. My examiner was wearing a naval type uniform and had one arm in a plaster cast. He explained that had fallen during a ship's inspection, so had been left in the office to conduct my test.

He told me to select a key and practise with a test message while he had a cup of tea. After a few minutes of this practising I realised he was writing. I paused, looking across the 20ft gap between us. He looked up and said "carry on". I said, "Do you want the phones?" He said, "No, I'm reading your key clicks."

I carried on, but became nervous. After sending a 'Q' I missed the 'U'. He

said "the U, the U", and as I sent the 8 dots to repeat, he said "OK, that's over 3 minutes. We can stop". His Morse to me was first class and easy to copy and I passed the test.

My first CW contact a few weeks later was a nerve-racking experience. I had called CQ on Top Band several times and was greatly relieved when no-one came back. Eventually someone did. It was GW3GCZ, the Rev. Frank Dorkin from Colwyn Bay. I was in a state of panic, but Frank was all kindness and calm. I was covered in sweat at the end of the QSO.

A few days later my in-laws said they had booked a holiday in Colwyn Bay. They said they knew Frank Dorkin, so I gave them a QSL card to give to him after his Sunday Morning Service. He said it was his first hand-delivered QSL, and I had his card on their return from holiday.

It just shows how helpful most amateurs are. It is now our turn to help all the newcomers with their new calls as they try out their keys on our noisy bands.

Albert Heyes G3ZHE
Penketh, Cheshire

Mystery Solved!

After a period of 50 years or so, I think I now know what I was trained to do in the Royal Signals from 1944 to 1948!

I have just read *Ultra goes to War* by Ronald Lewin, which is an account of the breaking of the German Enigma code and the work carried out at Bletchley Park during the war years – work which of course was 'ultra' secret.

He says 'without the enormous contribution of the Royal Corps of Signals,

Ultra would have been impoverished and the long monotonous toil of the signalers in SLUs was not relieved by their complete exclusion from the cipher work, or indeed, from the least inkling of what the messages they handled were about.'

SLUs were Signal Liaison Units which handled the decoding of messages from Bletchley Park and, according to Lewin, there was a strict apartheid between those who sent and received (us!) and those who enciphered and deciphered.

I trained as an Operator Wireless and Keyboard (OWK) in the Royal Signals on high-speed automatic equipment similar to that described by Fred Barnes in his article 'Frederick George Creed – Inventor Extraordinary', in MM17 (p.22). However, when I joined a High Speed Wireless Unit attached to the 8th Army in Austria in 1946 it was winding down and my operational experience was confined to teleprinters and 'hand' Morse.

After all these years, it now seems that high-speed automatic Morse could well have been the method by which the secrets of Bletchley Park were transmitted to field commanders.

We trained in large mobile units called 'Golden Arrows' and I wonder if any reader of *MM* knows the story of these units – the RAF and RN probably had similar set-ups. It could be an interesting story!

T.R. Hurst GW0GEV
Penhow, Gwent, Wales

(The RAF had mobile units called 'Blue Trains' for forward radio communications and Cable & Wireless had their

own Blue Trains to handle traffic from war correspondents at advanced press camps (see MM24, p.27).

Golden Arrows were high-power, long-range mobile wireless installations for use as a GHQ in the field. The Mk.I station comprised three 3-ton wireless lorries, and included a 1kW transmitter and R106 receivers, plus associated telegraphy gear, power supplies and generator.

Golden Arrow Mk.II was carried in four lorries plus generator trailers, and had a 3.5kW Marconi SWB8E transmitter and Marconi CR100/2 receivers.

MM would welcome further information and recollections about Golden Arrows, Blue Trains, or other forward radio units, and their methods of working. – Ed.)

Left-handed Bugs

I refer to previous correspondence about left-handed bugs, (MM29, p.43; MM31, p.44; MM32, p.48; MM34, p.44). I have a bug by an unknown manufacturer (not Vibroplex, but it looks like an 'Original Deluxe' model) with a plate reading:

'This machine is not guaranteed
nor made but only licensed by
J.E. ALBRIGHT, 253 BROADWAY,
NEW YORK. SPECIAL NO. 847,
W.U.T. CO'.

On the underside of the base is a large figure '1'.

The interesting feature of this bug (other than the above plate) is that it has been drilled with holes so that it can be assembled as a left-hand or right-hand key. Whichever way it is assembled there are nine extra holes of various sizes in the base for re-assembly to the opposite

hand. Mine was assembled for left-hand operation but I changed it to right-hand. It's not very attractive, but it does solve the problem of left-hand/right-hand operation that has been discussed previously in *MM*.

John Elwood WW7P
Phoenix, Arizona, USA

(The J.E. Albright plate identifies the key as one of the 'Bastard Bugs' described by Louise Moreau in The Story of the Key, and this particular one was licensed for use on Western Union circuits. These were copies of Vibroplex keys which infringed the Vibroplex patents. In 1914, Albright persuaded the telegraph companies not to allow their operators to use such illegal instruments unless they were certified by an inspector as meeting Western Union requirements for clean sending, and were comparable to Vibroplex. The owner could then buy one of the Albright 'licenses' for \$2.00 and affix it to his key. The key then became 'legal' for professional use, and was nicknamed 'The Albright Bug', the 'Legal Bug' or most commonly 'The Bastard Bug.'

*Regarding left-handed bugs, in a forthcoming listing of Speed-X keys in *MM*, John Elwood has also identified a number of other bugs which were available in both right-hand and left-hand versions. These were the Hi-Speed Standard 500 & 500L; Professional 501 & 501L; and the Amateur model 515 & 515L. – Ed.)*

Exclamation Mark

I refer to recent correspondence (MM39-42) about the various character

groups that have been used to denote an exclamation mark.

During my time in the Merchant Navy, as a Radio Officer in the 1950s to the 1980s, it was quite usual for the group **MHM** (---...---) to be used as an unofficial exclamation mark.

As an ex-seagoing radio man, may I say how much I regret the decline in the use of CW for communications. I still like to browse on the marine bands but nowadays find very little CW activity there – and I see in MM42 that yet more coast stations are closing down their CW component. 500kHz is now virtually deserted.

I am hoping shortly to break out into CW on the 160m and 80m amateur radio bands – if my DIY QRP transceiver works once it is completed! (or should I say **MHM**).

David Gunning
Prestatyn, Clwyd, Wales

(---...--- is of course the pre-1938 exclamation mark with an extra two dots added in. – Ed.)

Burmese Morse

The following extract from a book I read recently may be of interest to *MM* readers (The author is trying to buy a train ticket to Gokteik in Burma in 1970): 'Looking for the ticket office I stumbled into the radio operator's room where a bearded Eurasian... was seated, listening to Morse code and scribbling on a pad. He looked at me and jumped up... "Is there anything I can do for you?" "The Morse code continued. I said perhaps he'd better listen to it. "It's not very important," he said.

I noticed the pad, pencilled with Burmese characters. "Are they sending you Burmese Morse code?"

"Why not?" He explained that there were thirty-six letters in Burmese, but that they occasionally used English Morse code.

"How do you know whether they're sending Burmese or English?"

"Say you're getting Burmese. It goes on for a while. Then you get twelve dots. That means English is coming. Then you get English. Twelve more dots

means they're going back into Burmese. See, there's no word for 'piston rod' and 'crankshaft' in Burmese. It's interesting."

This is from *The Great Railway Bazaar* by Paul Theroux, published by Hamish Hamilton, p.194.

Stan Barr
Moreton, Merseyside

(Can anyone provide MM with further information about Burmese Morse? – Ed.)

Search for the Ideal Key

continued from page 40

power for a more conventional tension spring arrangement.

The final choice of tension spring resulted in a rather unusual design; the spring being in compression above the lever, on the rear contact side of the pivot rather than in the more usual placement below the lever in front of the fulcrum.

Assembly

The lever was made from 3/4-inch scrap brass bar. The pivot assembly was made from a piece of 1 3/4in diameter brass rod. An appropriate ball-bearing

race was pressed into place in the lever, with felt washers on either side to provide a dust trap, and a pivot rod went through the complete assembly.

One further key was built to this design, but to half-scale, for another friend at evening classes. On the full-size version there is a stop at the front of the key (which is not a contact) to reduce the possibility of damage to the spring contact strip by over-enthusiastic keying. This front stop was omitted from the smaller key but use of the key demonstrated that the stop should have been provided. The smaller version is just as smooth and easy in operation, but both Andy and I prefer the full-size keys.

MM

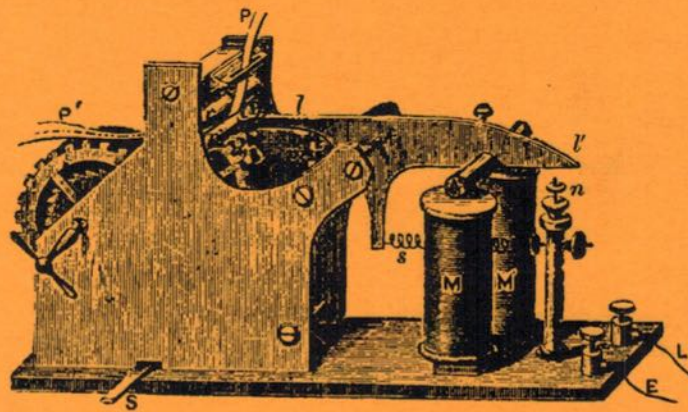
FISTS CW Club – The International Morse Preservation Society



FISTS exists to promote amateur CW activity. It welcomes members with all levels of Morse proficiency, and especially newcomers to the key.

The club has awards, nets (including a beginners' net), dial-a-sked for beginners, straight key activities, QSL bureau, newsletter, and discounts from traders.

Further information can be obtained from **Geo. Longden G3ZQS, 119 Cemetery Road, Darwen, Lancs BB3 2LZ**. Send an s.a.e. or two IRCs.



Morse's Recording Instrument, or 'Register'

L is the line-wire, and E the earth-wire, conveying the current from the distant station. The current thus sent traverses the coils of the electro-magnet, MM', the armature, A, of which is in consequence drawn down. A is attached to the lever *l'*, moving round the axis *k*. By the attraction of A, the end *l'* is lowered, and brought against the stud *n*. The armature must not touch the soft iron of the electro-magnet on being drawn down, for if it did it would stick, and would not be instantly released when the current ceases.

When the end *l'* is lowered, the end *l* is raised; *l'*, at its inner end, carries a steel point or style, *p*, which by the upward motion is brought against a strip of paper, PP', carried towards P' by the rollers *rr'*, set in motion by clock-work, C, quite independently of electricity. The clock-work is liberated or stopped by the switch S. The paper is supplied from a large roll or bobbin, above the instrument, which turns round as the rollers demand. So long as the style is elevated, the paper strip is made by the clock-work to rub against it. A line is thus embossed on its upper surface. To facilitate the doing of this, there is a groove in the upper roller, opposite the style.

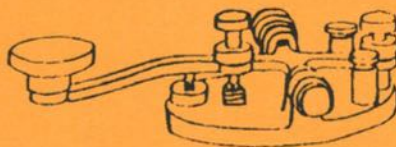
When the current from the distant station ceases, the lever *l'* is pulled back to its original position by the spring *s*, and the style falls away from the paper. To prevent it falling too far, another stud, *m*, lies on the other side of the axis. When the circuit is again closed, the style once more marks the paper, and thus the lever keeps oscillating under the opposing actions of the magnetism developed by the transmitted current, and the elasticity of the spring *s*. The time that the style remains elevated, determines the kind of mark on the paper. If it is nearly momentary, a dot is imprinted; for a longer time, a dash. We have thus the combinations of the alphabet in the combination of dots and dashes.

From Electricity, by Robert M. Ferguson, published 1887

Morse QSLs

A series of reproductions of QSL cards with a Morse theme

K **EY**
4 **(FOR)**
W **IRELESS**
E **NJOYMENT**



Harris A. Stover
10306 Mountington Ct.
Vienna, Virginia 22180

Fairfax County

German Democratic Republic

Y 23 OH

HSC 1260, Y2DXer Y2-CG

CW is a fundamental
thing of ham radio
consequently –

**LET YOUR
FINGERS TALK**



Ingolf Petzold, W.-Pieck-Str. 4, 4255 Benndorf – GDR